EMERGING LAND RELATIONS IN WESTERN UTTAR PRADESH 1951-81

ABSTRACT

THESIS

SUBMITTED FOR THE DEGREE OF

Doctor of Philosophy

IN

ECONOMICS

BY

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Under the Supervision of

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ABSTRACT

The present study deals with the land relations in Western Uttar Pradesh as they have been shaped during the period 1951-81. It covers the districts of the Agra and Meerut divisions.

Land Relations have been defined as the relationships among various classes and persons working on, and associated with land. After the Uttar Pradesh Zamindari Abolition and Land Reforms Act, 1951, land relations in Western U.P. underwent marked changes. The institution of absentee landlordism was in law abolished. On the eve of zamindari abolition most of the land was tenant operated; now the new landowners (the bhumidhars) cultivated the land themselves as well as through hired labour. Inequalities in the distribution of land-holdings have persisted; though this inequality is comparatively less marked in West U.P. In Western U.P. land settlements during the Biritish period were mostly made with small and medium sized zamindars under Bhaiachara land tenures. After zamindari abolition occupancy tenants benefited as they became the owners of the land they cultivated earlier but for the landless labourers no essential change occurred. Land reforms also failed to check the practice of share-cropping. Thus the exploitation of

small and marginal peasants and landless labourers continued even after land reforms (chapter II).

Commercialisation of agriculture also affected land relations. Generally poorer cultivators and share-croppers could not afford to grow commercial crops and had to be content with inferior grains. Production of commercial crops has been undertaken mostly by richer peasants. This further accentuated the degree of income disparity between the small and marginal peasants and the richer peasants (chapter III).

There was no scope left for any further expansion of cultivated land in the region by 1971 . Therefore production could increase only by intensification of agriculture. The Green Revolution technology was adopted in the late 1960s. It consisted of (1) high yielding variety technology and (2) mechanisation. The HYV technology is scale neutral, but not resource neutral. Larger farmers have reaped greater advantage from HYV technology due to its higher cost. The high yielding variety technology had a positive impact on the demand for labour in our region. Double copping, transplanting, application of inputs and weeding required more labour. Mechanisation of agriculture (in operations like irrigation, ploughing and threshing) has occurred on a larger

scale in the districts of Western U.P. compared to other regions of the state. This has resulted in displacing human labour and has adversely affected its demand (chapter IV).

At the bottom of the land system is the class of agricultural labourers. In addition to economic exploitation they are socially discriminated against because a big section of the landless labourers belong to the scheduled castes. Wages of agricultural labourers did not move upward by the same rate as the cost of living index. Most of the debt incurred by agricultural labourers was for consumption purposes, which is an indication of acute poverty (chapter V).

The caste system in Western U.P. is clearly related to exercise of differential rights in land. Upper castes are the main landholding castes and the majority of the agricultural labourers belong to lower and untouchable castes (chapter V).

The Uttar Pradesh Imposition of Ceiling on Agricultural Holdings Act, 1961, was passed to improve the economic conditions of agricultural labourers and small and marginal farmers. Stricter legislation on agricultural ceiling was passed in 1975. The area actually taken over by Government by 1980 in Western U.P. was however modest in size. The land

actually distributed among agricultural labourers and small farmers was still smaller. The resistance to ceiling by landowners in West U.P. was much greater than by their peers in Central and Southern U.P. where both the acquisition and distribution of land were on a larger scale. The ceiling legislation was not implemented very effectively and hence landholdings of rich peasants (bhumidhars) were not reduced to any significant degree (chapter VI).

Prices have an important bearing on agrarian structure. Since rich farmers are the monopolisers of commodity surplus, they gained from price rise. But the relative position of agricultural labourers deteriorated because they are the net buyers of agricultural produce. The actual working of the credit policy of the Government has further widened the resource gap between the large and the small farmers (chapter VII).

These detailed findings lead us to some broad conclusions. The agrarian relations in 1981 are vastly different from those in 1951. Self-cultivated ownership holdings are today the dominant form instead of rent receiving landlord holdings. But these has been no egalitarian redistribution of land, rather the original unevenness of operational units was reproduced under the consolidation of Holdings programme. This not only preserved

rich peasant farming, but helped to enlarge it. Former landlords operating sir and khudkasht and prosperous rich peasants have tended to grow into capitalist farmers, with HYV seeds, private tubewell irrigation, mechanisation and growing markets for agricultural produce. Owing to cheapness of labour, and the heavier labour input in small farms, this process is still not very advanced, but is certainly identifiable. Under these transformed relationships agricultural production has certainly increased. Production of commercial crops has increased even more. But the benefits of these changes have not proportionately reached the lower strata of the rural population, the landless labourers and poor peasants. Despite land-ceiling legislation the agrarian structure remains very deeply differentiated and inequitous.

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I am glad to certify that the Ph.D. thesis "Emerging Land Relations in Western Uttar Pradesh, 1951-81" was completed under my supervision and is Ms Kishwar Ara's own work.

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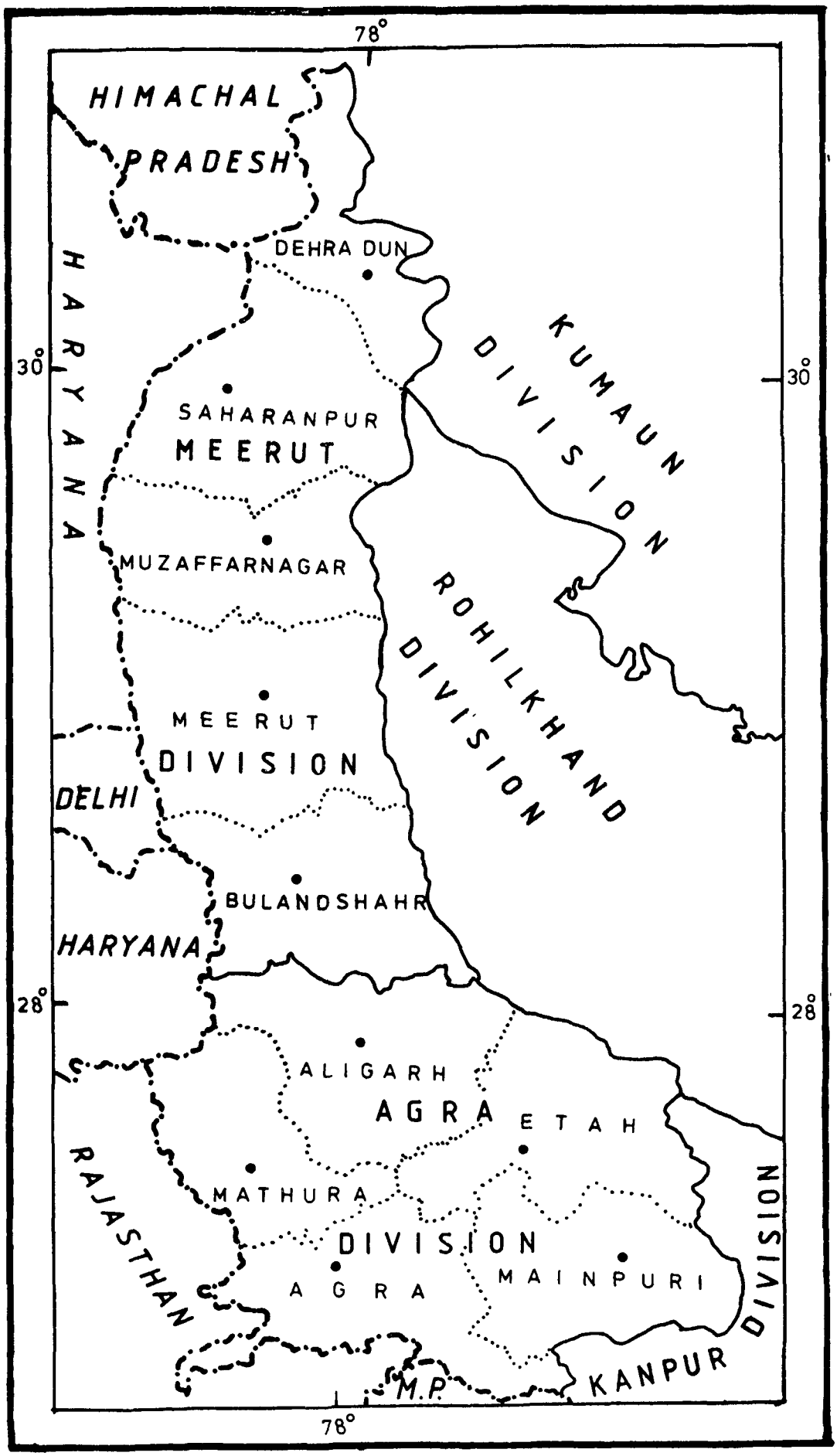
(Kishwar Ara)



DISTRICTS OF WESTERN UTTAR PRADESH

Meerut and Agra Divisions

Scale

0 10 20 40

MILES

INTRODUCTION

The study of the emerging land relations in India has developed into one of the most important aspects of social science research. There are many major issues relating to agrarian relations at the level of the country as a whole that have generated controversy and debate. In the present study an attempt has been made to study the major issues in the light of the developments in the agrarian scene in Western Uttar Pradesh. The study is based on the following major hypotheses: (1) the inequality in the distribution of land ownership has not been substantially altered in favour of the rural poor through land reforms (P.C. Joshi).[1] (2) the number of agricultural labourers has increased and they are largely being retained within the agricultural sector (P.C. Joshi).[2] (3) the new technology has increased the overall volume of work in certain operations (H.L. Laxminarayan).[3] (4) the increased labour demand associated with the new technology has been offset by mechanisation (C.H. Hanumantha

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1. Institutional Aspects of Agricultural Development, Allied Publishers Pvt. Ltd., 1987, New Delhi, p.179.

2. Ibid.

3. The Social and Economic Implications of the Large Scale Introduction of High Yielding Varieties of Wheat in Haryana, Delhi A.E.R.C., 1973.

Rao).[1] (5) the new technology has largely benefited the rich farmers (F.R. Frankel).[2] (6) there has been an increase in share-cropping and small farms have increased in number (P.C. Joshi).[3] (7) institutional credit has been mostly monopolized by the rural rich while rising agricultural prices also tend to increase the profits earned by this class (Amiya Kumar Bagchi, Utsa Patnaik).[4]

The above are some of the major issues on agrarian relations at All-India level. There can be no meaningful search leading to macro insights without a detailed and data based study of the problems at the micro level. India is a large country with marked regional and inter regional variations in agrarian relations. Therefore, there is a greater need to study the problems at regional levels.

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1. Technological Change and the Distribution of Gains in Indian Agriculture, Delhi, 1975.

2. India's Green Revolution: Economic Gains and Political Costs, Princeton, 1971.

3. Op. cit.

4. Bagchi, The Political Economy of Underdevelopment, London, 1982, p.176.
Patnaik, The Present Agrarian Situation in the Light of the New Economic Policy. Paper written for the Seminar on 'The State of the Indian Economy' Department of Economics, AMU, 1987, p.14 (Mimeographed)

Clearly, while the importance of regional studies to verify all India hypotheses will not be denied by anyone, it can be argued that regional specificities are likely to distort any inference drawn for the country as a whole, unless these are constantly borne in mind. Ideally, one should look for and choose the most typical region. For this there cannot be an easy indicator; and it is by no means the intention here to argue that Western U.P. is such a representative region. However, there are three important considerations which underlie our choice of this region.

First of all, in Uttar Pradesh (excluding the Himalayan districts) the Zamindari Abolition came in almost its classic form and very soon after Independence. This enables one to separate here the consequences of this category of reform from those of the next stage of reforms, based on land-ceilings, which came in the sixties. Such a neat separation is not possible for many other regions in India.

Secondly, Western U.P. falls within the wheat zone and, therefore, well within the area of the Green Revolution from the very beginning. And yet owing to pressure on land and only very limited land reclamation through canal irrigation, agriculture is here essentially intensive, while in the Punjab and much of Haryana, by comparison, it is far more

extensive. One could say, therefore, that Western U.P. is far less atypical of India than the Punjab; and introduction of technology here cannot be as directly attributed to labour shortages as say in Punjab.

Finally, the fact that Western U.P. is not among the more industrialised regions of India (the Delhi industrial region has mainly developed in the last two decades on its fringe, and largely outside of its limits) is another positive factor behind our choice. The pull of industrial employment, and other rural impacts of urban industrialisation, can practically be excluded here as major factor in the changing agrarian situation. (They cannot, of course, be regarded as non-existent or even insignificant). In this respect too the region of Western U.P. may well mirror the situation in India as a whole better than industrially advanced as well as backward regions of the country.

The districts covered by this study comprise the Agra and Meerut Divisions of Uttar Pradesh. These districts are Dehra-Dun, Saharanpur, Muzaffarnagar, Meerut, Bulandshahr, Aligarh, Mathura, Agra, Mainpuri and Etah. The district of Ghaziabad has been relatively recently carved out of the Meerut District.

The State itself is identical with what before 1947 was the most populous province of British India, bearing the name of the United Provinces of Agra and Awadh. In terms of population, Uttar Pradesh is India's largest State. It varies in character both geo-physically and economically. It has a widely different terrain and range of precipitation. Essentially, however,it is divisible, geographically, into two unequal parts; the Himalayan portion, and the Ganges Plain.

D.H.K. Spate has divided the 'Ganges Plain', again, into two major portions. These are the Upper Ganges Plains and the Middle Ganges Plains. Most of the Middle Ganges Plains lie in Bihar; but we are concerned here with what spate has described as the Upper Ganges Plains. The Upper Ganges Plains incorporates the Divisions of Meerut (excluding the Dehra-Dun district), Agra, Rohilkhand, Lucknow, Allahabad (excluding the tahsils of Handia, Phulpur, Meja and Karchhana) and Faizabad (excluding the tahsils of Utraula, Balrampur, Faizabad, Tanda, Akbarpur, Sultanpur, Kadipur and Patti) and the Southern part of the Haldwani tahsil of Naini Tal.

Spate has divided the Upper Ganges Plains by a line running roughly from the Yamuna-Ganga confluence at Allahabad

across the north-north-west to south-south-east section of the Ghaghra. This does not correspond well with the alignments of isohyets but does divide two main crop-areas, the wheat producing areas mainly to the West of the line, and the rice zone, with an acreage double that of wheat, in the east. It also divides U.P. into two parts - Western U.P. and Eastern U.P. The Western U.P. Plains represent the best agricultural region in the whole of the State. The region has a very high production level, generally. One of the reasons for the high production level is that nearly all agricultural developments, in the past, took place mainly in the Western part of U.P. A major development was the construction of a network of canals which reduced the element of risk in agriculture and gave farmers incentive to experiment with new techniques and crops.

The Upper Ganges Plain of U.P. is a sub-humid region between the dry Punjab Plain and the humid Middle Ganga Plain. The average annual rainfall varies between 50 cm and 140 cm with an uneven spatial distribution.

Soils of Western Uttar Pradesh are classified into three main varieties: loam, bhur and matiyar. Loam is a mixture of sand and clay in almost equal proportions. Bhur

contains 75 per cent of sand in it. Matiyar contains a greater amount of clay and is darker in colour.[1]

Wheat, barley and millets are the main crops of Western U.P. and they together account for about 60% of the total cropped area in this region.[2]

The economy of Upper Ganges Plain is dominated by agriculture which, together with its related activities forms the most important source of employment and income. The proportion of the net sown area to the total area varies between 82 per cent in Mathura to 62 per cent in Mainpuri in Western U.P. The eastern and several other districts of the Awadh Plain, on the other hand have a higher proportion of Usar and other waste and barren lands.

The Upper Ganges Plain has a very low percentage of land under forest (8.4%) as compared with U.P. as a whole (12.8%) which in itself is not a high proportion. Some of the districts of Western U.P. e.g. Saharanpur (13%), Pilibhit (20.7%) and Mainpuri (12.1%) have more than the average area under forests in the Upper Ganges Plain.

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1. Census of India 1951, Vol.II, Uttar Prdesh, Part I-A-Report, p.7.

2. R.L. Singh, India, A Regional Geography, p.124.

The Upper Ganges Plain is one of the highly irrigated agricultural regions of India and irrigation has played a dominant role in boosting its agricultural prosperity, particularly during the last one hundred years. There is a wide sub-regional and district level variation in the percentage of area under irrigation. Most of the districts of Western U.P. have a high proportion of irrigated area. Tube-wells constitute a major source of irrigation in Western U.P. But tanks and jhils are negligible as sources of irrigation.

The Upper Ganges Plain has a diversified cropping pattern. There is a very high emphasis on the food-crops and over 85 per cent of the total cropped area is devoted to such crops in this region. Wheat is the premier crop of Western U.P., and one fourth of the cropped land in the region is under this prized crop. Wheat replaces rice as one goes west-ward where the fertile loamy soil, adequate and assured irrigation and the small but highly beneficial winter rain and suitable temperature regimes are significant factors.

The other major crops of Western U.P. are rice, millets, maize, pulses, oilseeds and sugarcane. Rice is second to wheat in importance in the region of Upper Ganges Plain claiming one-sixth of the total cropped area. It is an important crop in the districts of Saharanpur and Pilibhit in Western U.P. where it occupies 17.3 per cent and 32.0 per

cent of the cropped land respectively. The district of Dehradun is also famous for rice cultivation. But in the districts of Aligarh (1.4%), Meerut (2.5%), Muzaffarnagar (7.6%) and Bulandshahr (8.8%) it is rather unimportant and in the districts of Mathura (0.5%) and Agra (1.8%) it is negligible.[1]

Millet and maize together claim 16.8 per cent of the total cropped area of the Upper Ganges Plain. Bajra is the most important millet crop of this region. The Districts of Agra and Meerut divisions form a compact zone cultivating this crop, the area varying between 9.2 per cent of the total cropped area in Bulandshahr to 24.7 per cent in Agra.[2]

Sugarcane and cotton are the major commercial crops of the Upper Ganges Plain. Sugarcane occupies 7.5% of the crop land in Upper Ganges Plain. It is one of the important crops of Western U.P. The area under sugarcane varies between 24.3 per cent in Muzaffarnagar and 10.6 per cent in Naini Tal in Western U.P. cotton is concentrated in the west plain between Muzaffarnagar and Mathura where each district devotes more

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1. R.L. Singh, India, A Regional Geography, National Geographical Society of India, Varanasi, 1971, p.166.
2. Ibid., p.167.

than one per cent of its crop land to cotton. But the acreage under cotton has now been mostly switched over to sugarcane.[1]

The Upper Ganges Plain is one of the most densely populated parts of India. The population of this region has shown an overall growth of 47.3 per cent during 1901 and 1961. Western U.P. as a whole is the area of overall high growth (50-80%) excepting the districts of Etawah, Farrukhabad, Mainpuri and Aligarh which show medium overall growth (35-50%). Shahjahanpur and Pilibhit are the areas of low growth (below 35%). Etah shows high growth rate (80%). The increased rate of growth, it is generally accepted, was due to continued improvement in medical and health services, resulting in greater longevity and decreased mortality.

Within the Upper Ganges Plain there is much disparity in respect of economic development, West U.P. being the most developed and the Awadh tarai the least. In Western U.P. there is still considerable scope for further economic development; specially there is scope for further crop diversification and introduction of new crops like soyabean.

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1. R.L. Singh, India, A Regional Geography, p.167.

The population of Western Uttar Pradesh increased from 2.28 crores in 1951 to 3.93 crores in 1981, that is by about 73 per cent. The net increase in the total population of Western U.P. between 1951-81 was 1.65 crores.[1] The proportion of population of Western U.P. to the total population of Uttar Pradesh was 36 per cent in 1951 but this proportion came down to 35.5 per cent in 1981. This means that the population of other regions of U.P. increased comparatively by a faster rate than that of Western U.P.

All the regions of Uttar Pradesh are predominantly rural. According to the 1981 census 82.0 per cent of the total population of the State lived in rural areas and 18 per cent in urban areas. This percentage is 76.2 and 23.8 respectively for Western U.P. West U.P. has the highest percentage of urban population compared to other regions of Uttar Pradesh. The level of urbanisation, decreases as one moves from west to east. A few large villages in the West U.P. have even developed into centres of trade and commerce. It is the most progressive region in the State and the supply of hydro-electric power has helped in the development of agro-based industries e.g. food-processing, edible oils, paper and pulp and sugar manufacturing.

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1. Census of India, Uttar Pradesh, 1951 & 1981, p.5.

In an agrarian economy the extent of occupation and possession of land plays an important role in determining the economic and social position of a person. Land relations in the narrowest sense would mean the relationships among various classes and persons working on, and associated with, agriculture. Various agricultural classes emerge as a result of their relationship with land. Some classes own the land, some take in on rent while others merely work on it for wages. The prevailing agrarian relations provide an index to the structure and nature of an agrarian society.

Before the advent of British rule in India private property in land was not fully developed. The state, intermediaries and peasants were involved in a network of customary rights and obligations. The agrarian system was based on the prevailing divisions of labour fortified by the caste system.

The concept of private property in land, with the right of sale and alienation, emerged as a result of introduction of British revenue systems. They created an intermediate strata of landlords together with the establishment of revenue extracting mechanisms at the district and village levels.

It has been argued that the agrarian structure in U.P. was not a feudal but rather an authoritarian paternalistic system, with the village zamindar as a local potentate at the head and the tenants, share-croppers, landless labourers, etc. constituting the lower levels in the hierarchy.

In this study an attempt has been made to examine the land-relations in Western U.P. as they have emerged after independence, especially after the implementation of land reform legislation, which broke-up the older system. The land reform legislation abolished the institution of absentee landlordism, but a new class of landowners - the bhumidhars - were allowed to emerge. The occupancy tenant in some cases benefited as the lands they had cultivated earlier became theirs by law. They took to self-cultivation and prospered. The landlords, afraid of losing their lands due to the impending land reforms, evicted hereditary tenants and took over their land for self-cultivation; most of the evictions took place in the case of smaller tenants. The clause allowing retention of Sir and Khudkasht lands, and the later imposition of ceilings allowed the zamindars to keep large tracts of land. The landless Harijans were worst hit despite some efforts of the Government to protect their interests.

After 1951 the agrarian relation have undergone marked changes in Uttar Pradesh. A study of the new emerging landed classes, share-croppers, cultivators, landless

labourers, etc., and their inter-relationship is of vital importance. The ownership, use and control of land and its produce provide, even today, a key to the understanding of the agrarian structure and its problems as a whole.

The present thesis is based on the study and analysis of data drawn from diverse sources. Reports of various commissions, official and unofficial surveys, and a large number of books and articles have been consulted. A detailed Bibliography is provided at the end.

The study begins (Chapter I) with the description of agrarian relations on the eve of zamindari abolition. This helps in understanding the changes that have taken place in agrarian relations after the abolition of Zamindari system. Chapter II deals with the abolition of Zamindari in U.P. and examines its effects on agrarian relations in the region. Chapter III traces the changes in cropping pattern since 1951 and their impact on different agricultural classes. Special attention has been paid to the development of irrigation and the benefits accruing from it to different sections of peasantry. An attempt has also been made to calculate the compound growth rate of area under important crops for the period 1951-81. The original sources of data on whose basis these calculations were made are 'Uttar Pradesh Mein Mukh Fasloon Ke Ankde' and 'Season and Crop Reports. Chapter IV

studies the introduction of modern technology in agriculture and the changes it has brought in the existing agrarian relations in Western U.P. Chapter V deals with the conditions of agricultural labourers particularly since early sixties. Wages, burden of debt and employment position which are the major factors determining the living conditions of agricultural labourers have been examined. An attempt has been made to trace and analyse the changes that have taken place in the economic conditions of agricultural labourers in Western U.P. during the period 1951-81. Chapter VI is devoted to the study of ceiling legislation, the surplus land actually secured under it and the extent of the distribution among agricultural labourers. Chapter VII discuss the movement of agricultural prices of the major crops in Western U.P. based on statistical data taken from the Farm (Harvest) prices of Principal crops issued by the Directorate of Economics and Statistics. It also deals with the distribution of agricultural credit by government and private agencies among different rural classes and examines the ways in which the supply of agricultural credit influenced the productivity and profit on the farms belonging to different classes of cultivators. The major findings and issues have been summarised in the concluding chapter.

CHAPTER I

AGRARIAN RELATIONS ON THE EVE OF ZAMINDARI ABOLITION

In Uttar Pradesh the agrarian relations, in pre-British period, thrived in the form of self-sufficient village communities. The harvest was divided among all the parties to economic, political, and social life from the ruler to the lowest menial. None was thus sole owner, each was a part owner. Land was managed jointly by villagers, based on custom. This system was disrupted during the eighteenth century by Marathas, officials of the Kingdom, old rajas, new revenue farmers and powerful local persons competing for political power and for control over larger or smaller areas.[1]

In the North-Western provinces (U.P.) the British assumed that there was a single owner for each plot and made land settlements with the persons having superior rights in land (the right to engage to pay the revenue and to retain any surplus rents or profits). The ownership rights in land are often accorded to the wrong persons through ignorance, and for the same reason many secondary claimants, who

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1. Walter C. Neale, Economic Change in Rural India, Land Tenure and Reform in Uttar Pradesh, 1800-1955, London, 1962, p.135.

formerly had some rights in the produce of the land or some security of tenure, lost their rights or security in consequence of the grant of sole ownership.[1] But later subordinate or inferior rights were also recognised during the British period. Settlements made under the Regulation VII of 1822 recorded and secured the rights of Co-sharers in village ownership and did the same for other customary rights. In 1830s cultivators of twelve years standing got the occupancy rights, and so began the gradual encroachment of tenancy rights upon the rights of owners. Different Acts were passed during the British period which distributed the rights of ownership and created a complex picture of different kinds of tenures.[2]

As a result of British land settlement Policy in Uttar Pradesh, there had developed a long chain of sub-infeudation. Besides the proprietors, there were other intermediaries between a principal tenant and a zamindar. These included an "Under Proprietor", "sub-proprietor", "permanent tenure holder" or "permanent lessee". Their rights were guaranteed under the terms of settlement and were permanent, hereditary

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1. Walter, C. Neal, Economic Change in Rural India, London, 1962, p.81.

2. Walter, C. Neal, Economic Change in Rural India, London, 162, p.86.

and transferable like those of Zamindars. The burden of all these classes fell on the tenants who were the actual tillers of the soil. In certain other cases the tenants themselves leased out or sub-let their holdings and added to this process.[1]

Despite the limitations on the owner's power and the transfer of some of those powers to the tenants, the major characteristic of land tenure was individual ownership. This system was different from the traditional Indian system in which many persons were entitled to customary shares in agricultural produce grown for the use of the village and in response to local needs and tradition.

In the North-Western Provinces land settlements were made with the bodies of co-sharers while in Awadh settlements were made with the village headmen or revenue farmers who were declared to be proprietors while the interest of other members of the village communities was ignored and they were declared tenants.

The difference in policy in Awadh and the North-Western Provinces is reflected in the great difference shown by the

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1. Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964.

statistics of land cultivated by owners and privileged tenants. An exact comparison is not possible because figures for the North-Western Provinces are in terms of land area for 1892 and for Awadh in terms of proportion of cultivators for 1882. Nevertheless, the differences are striking enough

TABLE 1.1

Types of Cultivating Tenures in the North-Western Provinces (1892) and Awadh (1882)

Type of Cultivator	Percentage of cultivated land in N.W.P.	Percentage of cultivators in Awadh
Proprietors	24.0	7.5
Permanent tenure holders and fixed rate tenants	1.0	0.0
Occupancy tenants*	36.5	4.5
Tenants-at-will	38.5	88.0

* Including exproprietary tenants

Source: Walter C. Neale, Economic Change in Rural India, Land Tenure and Reform in Uttar Pradesh, 1800-1955, London, 1962, p.100.

The table shows that most cultivators in awadh were tenants-at-will, whereas over half the cultivators in the North-Western Provinces were proprietors or privileged tenants.

On the eve of Zamindari Abolition in Uttar Pradesh although all agricultural land was owned and held by the Zamindars, the area under their direct cultivation or occupation (Sir and 'Khud' Kasht) was small.

TABLE 1.2

Area under different tenures before Zamindari Abolition in U.P. (1951-52)

Type of tenure	Area in acres	Percentage
1. Sir and Khudkasht	74,36,701	16.55
2. Thekedars, mortgagees in possession and exproprietors	9,31,232	2.07
3. Sub-proprietors and under-proprietors	6,71,545	1.49
4. Permanent tenure holders	2,191	-
5. Fixed rate tenants	8,21,748	1.83
6. Tenants on special terms in Avadh	7,409	0.02
7. Occupancy tenants and tenants of not less than 12 yrs in 1333 Fasli	1,25,76,638	27.99
8. Hereditary tenants and hereditary tenants with special rights	1,89,39,407	42.15
9. Non-Occupancy tenants	4,48,069	1.00
10. Occupiers of land without consent	19,73,923	4.39
11. Grove-holders	7,36,779	1.64
12. Grantees	3,89,108	0.87
Total	4,49,34,750	100.00

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.26.

The above table shows that 16.55 per cent of the total land was under the direct occupation of the Zamindars as their Sir and Khudkasht. The U.P. Zamindari Abolition Committee (1945-46) pointed out that in many cases even the Sir and Khudkasht land was let out. About 80 per cent of the total land was occupied by tenants among whom the largest occupation was that by hereditary tenants who occupied nearly two-fifths of the total agricultural land.

Land was unequally distributed even among the Zamindars. This inequality was marked in all the regions of Uttar Pradesh. It was, however, at its extreme in the eastern districts where a little more than one percent (1.20%) of the Zamindars owned nearly half of the village area. The degree of inequality among Zamindars was relatively less in the Western districts. One obvious reason being that in Western U.P. there were mostly small and medium size Zamindars under the Bhaiachara land tenures while in eastern U.P. there were many big Zamindars under the Taluqdari system.

TABLE 1.3

Distribution of Sir and Khudkasht land in Sample Villages by Regions (1951-52) area in acres

Sir and Khudkasht Holding	Western Region	Eastern Region	Total
1. Less than 5 acres	997.15 (25.72)	496.00 (18.97)	2590.18 (21.04)
2. 5 to 10 acres	751.18 (19.38)	318.85 (12.19)	1815.54 (14.75)
3. 10 to 25 acres	1205.66 (31.08)	687.15 (26.28)	2935.60 (23.85)
4. 25 to 50 acres	600.69 (15.50)	496.82 (19.00)	2194.72 (17.83)
5. 50 to 100 acres	322.82 (8.32)	231.34 (8.45)	1369.72 (11.13)
6. 100 to 200 acres	-	115.00 (4.40)	1123.47 (9.13)
7. 200 acres and above	-	280.05 (10.71)	280.05 (2.27)
Total	3876.30 (100)	2615.21 (100)	12309.55 (100)

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, p.34.

TABLE 1.4

Distribution of Sir and Khudkasht Area in Sample Villages (1951-52) U.P.

Sir and Khudkasht	Percentage of Zamindars having Sir and Khudkasht to total Zamindars	Percentage area of Sir and Khudkasht to total area of Sir & Khudkasht	Average Sir and Khudkasht per Zamindars (acres)
1. Less than 5 acres	81.55	21.04	1.09
2. 5 to 10 acres	8.64	14.74	7.23
3. 10 to 25 acres	6.85	23.85	14.75
4. 25 to 50 acres	1.96	17.83	38.51
5. 50 to 100 acres	0.69	11.13	68.45
6. 100 to 200 acres	0.28	9.13	140.43
7. 200 acres and above	0.03	2.27	280.05
Total	100.00	100.00	4.24

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, p.34.

Sir land was the land on which no lesser rights could accrue under any conditions. Sir land was cultivated by the proprietor, his servants or hired labour for twelve years continuously. Sir land was the land recognised by village custom as the special holding of a Co-sharer and so treated in the distribution of burdens and profits.

Table 1.4 shows that even Sir and Khudkasht was unequally distributed among Zamindars. 81.55 per cent

Zamindars in the sample villages in Uttar Pradesh had less than 5 acres each as Sir and Khudkasht on the eve of Zamindari Abolition (1951-52). Only 21 per cent of the total Sir and Khudkasht area was under the occupation of these small holders. 2.96 per cent or 3 per cent of the total Zamindars had Sir and Khudkasht of 25 acres or more. But they had 40 per cent of the total Sir and Khudkasht area under their control. This shows the concentration of land in the hands of few big Zamindars. The average size of Sir and Khudkasht per Zamindar shows marked inequality in the distribution of Sir and Khudkasht land amongst the class of landowners. 81.55 per cent of Zamindars had a little more than one acre land per Zamindar as Sir and Khudkasht, 0.03 per cent had 280 acres of land per Zamindars as Sir and Khudkasht. Thus most of the Sir and Khudkasht cultivators had petty holdings under their cultivation.

According to U.P. Zamindari Abolition Committee nearly one-fifth of the total land in U.P. was under the cultivation of proprietors as their Sir and Khudkasht in 1944-45. There was certain marked Regional differences. In Western U.P. 15.80 per cent of the area was under Sir and Khudkasht while the figure was 22.85 per cent for Eastern U.P. in 1944-45.

TABLE 1.5

Area under Sir and Khudkasht in Sample Villages in Western U.P. before Zamindari Abolition (in acres)

Year	Western U.P.	Uttar Pradesh
1948-49	2518	11325
1949-50	2566	11441
1950-51	2635	10502
1951-52	3876	12309

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, p.35.

Table 1.5 shows that in the year preceding Zamindari abolition, the area under Sir and Khudkasht increased in Western U.P. as well as in Uttar Pradesh as a whole. It is suggested that this increase was for the purpose of resumption of cultivation and for establishment of farms by the Zamindars to retain as much land as possible when reforms were enacted.

Changes in the economic position of agricultural labour house-holds constitute one of the most important aspects of land relations. There are two distinct schools of thought with regard to the origin and growth of the class of agricultural labourers in India. According to one group of Scholars (e.g. Patel and Malaviya), the establishment of

British rule was responsible for the emergence of a distinct class of agricultural labourers. According to the Second view (e.g. Joshi and Kumar), the genesis of the agricultural labourers as a class could be traced back to the caste system itself.[1]

Surendra J. Patel relying partly on census data, reported that the emergence of agricultural labourers in large numbers was essentially a nineteenth century phenomenon. It resulted from the loss of land by small cultivators and the loss of occupation by artisans who faced the competition of the products of British industries.[2] The System of cash rent, the coming in of the cash crops and external market encouraged the growth in the size of landless agriculturist class which, due to lack of alternative employment, hired itself out as agricultural labourers.[3]

Another factor which contributed to the increase in the number of agricultural labourers was the marked increase in population around the turn of the nineteenth century. Since

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1. M. Chattopadhyay, Conditions of Labour in Indian Agriculture, K.B. Bagchi & Co., Calcutta, 1985, pp.1-4.
2. Ibid., pp.1-4.
3. Sudha Pai, Changing Agrarian Relations in U.P., New Delhi, 1986, p.28.

there were few other employment opportunities, those who could not sustain themselves on land became agricultural labourers. Apart from the natural increase in population after 1857, the pressure on land increased due to shift in the occupational pattern. A large number of people who were employed in non-agricultural pursuits particularly urban crafts were obliged to turn to land. Rise in rents and the failure of the peasant to pay their dues resulted in ejectment of poorer peasants further increasing the number of landless labourers.

The First Agricultural Labour Enquiry Report (1951) defined an agricultural labourers as one who was employed for wages in the process of crop production. Any person who worked as an agricultural worker for more than one half of the total number of days on which he actually performed work, during the year, was treated as agricultural worker. Such persons were subdivided into "agricultural workers with land" and "agricultural workers without land". Agricultural labourers would include all "agricultural labourers without land" and those "agricultural labourers with land" for whom the wages earned by working for others was more important than income from their own land, as a means of livelihood.[1]

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1. Agricultural Labour in India, Report on the Second Agricultural Labour Enquiry, 1956-57, Vol.XII, U.P. Labour Bureau, Ministry of Labour and Employment, Govt. of India.

TABLE 1.6

Percentage Distribution of Agricultural Labour Households with and without Land in U.P. in 1950-51 and 1956-57

Period	Percentage of Agricultural labour Households	
	With land	Without land
1950-51	40.13 (634)	59.87 (946)
1956-57	55.59 (1093)	44.41 (873)

Note: Figures in brackets show absolute numbers (in thousands) of agricultural labour households.

Source: Report on the Second Agricultural Labour Enquiry, 1956-57, p.17.

The above table shows that about 60 per cent of agricultural labour households were without land in 1950-51. There was an increase in the proportion of agricultural labour households with land during 1956-57. The agricultural labour households with land include all those household which possess land for cultivation and the households without land are those household which do not possess any land for cultivation and their members are employed on wages either in agriculture or outside it but 50 per cent or more of the total income of the members of such households is derived from employment as labourers on lands belonging to others. Since district-wise data on the extent of landlessness among

agricultural labourers are not available for the period 1950-51, data for U.P. as a whole have been used here.

Upper castes are the main landholding castes and the lowest castes provide agricultural labour. The majority of the agricultural labourers belong to scheduled castes and scheduled tribes, proportion of scheduled castes and scheduled tribes agricultural labourers were above 40 per cent in all the districts under Agra and Meerut divisions except in Dehradun during 1951 census. This proportion was highest in Saharanpur being 66 per cent.[1]

The agricultural labourers were unemployed during the slack season, their wages during the period of employment were very low and they possessed no reserves for bad seasons. Therefore, usually, they led a life of semi-starvation. They were driven by their poverty into debts which they had no means of repaying except by working on the fields of their creditor. And once they fell into this trap it was difficult to come out of it.

Agricultural labourers are divided into two types, casual labourer and attached labourer. Casual workers are employed on daily wages for short and unspecified periods

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1. Census of India, 1951, Vol.II, Uttar Pradesh, Part II-C-Age and Social Tables and District Census Handbooks, 1951.

when there is demand on the farm. On the other hand attached labourers, who form only a small proportion of the agricultural labour force get employment as regular employees on the farms of their masters on a contract basis, the period of contract ranging from three months to one year.[1] In 1950-51 the percentages of casual and attached agricultural labour households to total agricultural labour households were 90 and 10 per cent respectively in the entire U.P.[2]

TABLE 1.7

Employment of Casual and Attached Adult Male Agricultural Labourers During 1950-51 (U.P.)
(average number of days worked during a year)

Types of Labour	Employment for wages			Self-employment	Grand Total
	Agricultural	Non-Agricultural	Total		
Casual	243	37	280	37	317
Attached	335	10	345	9	354

Source: Report on the Second Agricultural Labour Enquiry, 1956-57, U.P., p.24.

1. Report on the Second Agricultural Labour Enquiry, 1956-57, U.P., p.20.

2. Ibid., p.17.

On an average casual agricultural labourers were employed for 317 days in a year while attached labourers were employed for 354 days. The attached worker is more or less in continuous employment throughout the period of contract. Attached worker does not suffer from the same extent of insecurity of employment as his casual counterpart. For this security he might accept a lower daily wage than that obtained by a casual worker.[1] This is reflected in the following table:

TABLE 1.8

Average Daily Wage of Male Agricultural Workers During 1950-51 (in annas)

Zone	Casual workers	Attached workers
North India (U.P.)	18.8	15.0

Source: B. Ramamurti, Agricultural Labour, p.22.

The fact that the wage-rate was lower for attached labour indicates an element of labour rent in the form of deduction from wages.[2] It also means a higher rate of exploitation.

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1. B. Ramamurti, Agricultural Labour, How they Work and Live, Manager of Publications, Delhi, p.22.

2. Baudhyan Chatterji, 'Agricultural Labour Enterprise and Land Reform in India', Enquiry, No.2, 1959, p.68.

The most important factors responsible for low wages in the agricultural sector were the unorganised nature of farm labourers, increase in use of family labour by small cultivators and the seasonal character of agricultural operations. These reduced the bargaining capacity of the labourers. The non-availability of alternative employment opportunities was another very important factor.

TABLE 1.9

Average Daily Wage Rates of Casual Agricultural Labour (in annas) in 1950-51

Zone	Men	Women	Women's wage as a proportion of men
North India (U.P.)	18.8	16.8	89.0

Source: B. Ramamurti, Agricultural Labour, p.18.

The wage rate for female agricultural labourers was less than that for male labourers. While the economic and social position of agricultural workers, in general, was miserable, that of women agricultural workers was even more so. They were exploited even more than the men workers who themselves were among the worst exploited.[1] The wage rate of

1. Harkishan Singh Surjeet, Agricultural Workers, Their Problems and 20 Point Programme, p.16.

women casual labourers as percentage of men's wages was 89 in 1950-51. Secondly, women workers got employment for shorter periods compared to male workers. They got employment in agricultural occupation only for 119 days in the whole year in 1950-51, while men were employed for 225 days in the same year.[1] They were further discriminated against in regard to the type of agricultural operations they were considered eligible for. The employers have a bias in favour of employing men and against employing women in operation like ploughing and watering. Further exploitation takes place in the form of indirect but unpaid for employment. Men are employed, but their wives are very often expected to help them without receiving any payment.[2]

District-wise data on wages of agricultural labourers for the period 1950-51 are not available. The District Gazetteer of Mathura gives the data of cash wages for agricultural labour in rural areas for the year 1939, 1944 and 1964. In all other District Gazetteers data on wages of agricultural labour are given only for the period 1970 and afterwards.

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1. Report on the Second Agricultural Labour Enquiry, 1956-57, pp.23-25.

2. Harkishan Singh Surjeet, Agricultural Workers - Their Problems and 20 Point Programme, p.16.

TABLE 1.10

Cash Wages Paid for Agricultural Labour in Rural Areas (Mathura District)

Occupation	Wages in Rupees per day		
	1939	1944	1964
Blacksmithy	0.69	2.00	3.00
Carpentry	0.62	2.28	3.00
Ploughing	0.25	1.06	2.00
Reaping	0.25	1.00	3.00
Weeding	0.25	1.00	2.00

Source: District Gazetteers, Mathura, Department of District Gazetteers, U.P., Lucknow, 1968, p.192.

But the information given in the District Gazetteers, Mathura is important, and might be true of the other districts as well. It shows that wages for agricultural occupations are lower than for non-agricultural occupations. Thus the position of those agricultural labourers who depend entirely on agricultural work are much less compared to those who have got some other skill. But most of the agricultural labourers do not get the opportunity to acquire other skills.

Sudha Pai has divided the State of Uttar Pradesh into three zones for presenting wage statistics for 1955-56. The

wage level was the lowest in the eastern U.P. and increased as we move westward.[1]

TABLE 1.11

Daily Wages of Agricultural Labourers in Uttar Pradesh (1955-56) in Rupees

West U.P.	Central U.P.	East U.P.
1.19	0.88	0.58

Source: Sudha Pai, Changing Agrarian Relations in U.P., p.173.

As far as wages were concerned the condition of agricultural labour was found to be somewhat better in Western U.P. compared to Central and Eastern U.P.

The living conditions of agricultural labourer naturally depend on his income. The concept of income as applicable to agricultural labour households is rather complicated due to the fact that their income is uncertain and irregular and is obtained from diverse sources. They get income from both agricultural and non-agricultural employment. Agricultural labour households with some land

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1. Sudha Pai, Changing Agrarian Relations in U.P., p.173.

(either owned or taken on lease) get some income from 'cultivation of land' and also from 'self-employment' in their own non-agricultural enterprise[1] like leather tanning, pig raising etc.

In the 1950-51 Agricultural Labour Enquiry the 'family' was taken as the economic unit. The earnings of all 'earners' and 'earning dependents' as also the income of the family accruing from property, cultivation of land (either owned or taken on lease), live stock, etc. were pooled together as these were being used for maintenance of the entire household. The level of living of agricultural labourers was assessed in terms of the household as a whole and not for each individual.[2]

TABLE 1.12

Average Annual Income of Agricultural Labour Households (U.P.) in Rupees

Period	Casual Households	Attached Households
1950-51	551	562

Source: Report on the Second Agricultural Labour Enquiry, 1956-57, p.37.

1. Report on the Second Agricultural Labour Enquiry, 1956-57, p.37.

2. Ibid. p.37.

The income of the attached households was higher than that of the casual households. The reason for higher income of attached households was their employment for a greater number of days compared to casual labour households.

TABLE 1.13

Average Annual Income of Casual Agricultural Labour Households by Sources in U.P. (in Rs.)

Period	Cultivation of land	Agricultural labour	Non-agricultural labour	Others	Total
1950-51	61.71 (11.2)	379.64 (68.9)	56.20 (10.2)	53.45 (9.7)	551.00 (100.0)

Source: Report on the Second Agricultural Labour Enquiry, p.38.

During 1950-51 the income from agricultural labour constituted approximately 69 per cent of the total income of agricultural labourers in U.P. Thus agricultural wages constituted the main source of their income.

For a better appreciation of the level of living of agricultural labour households, it would be more appropriate if the per capita income is taken into account, as the household size varies from family to family. The following statement shows the annual per capita income of agricultural labour households.

TABLE 1.14

Annual Per Capita Income of Agricultural Labour Households in 1950-51 (U.P.) in Rupees

Period	Category of Agricultural Labour Households	
	Casual	Attached
1950-51	131.2 (4.2)	137.1 (4.1)

Note: Figures in bracket denote the average size of the household.

Source: Report on the Second Agricultural Labour Enquiry, 1956-57, U.P., p.40.

During the First Agricultural Labour Enquiry (1950-51) data on the consumption expenditure of agricultural labour households were collected and tabulated under the following items (1) Food (2) Clothing, foot-wear, bedding and household requisites (3) Fuel and lighting (4) House rent and repairs (5) Services and miscellaneous items and (6) Ceremonies and functions.[1]

The consumption expenditure shown in the Enquiry included the expenditure incurred on purchases for domestic consumption only. Capital expenditure, if any, was not taken

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1. Report on the Second Agricultural Labour Enquiry, 1956-57, p.41.

into account. Similarly, certain items like payment of interest on loans, repayment of debts etc., were not included. These items would have actually reduced the income available for consumption expenditure. Savings and investment which might help in maintaining the standard of living at a future date were also excluded.[1]

In addition to wages, agricultural labourers were often paid customary allowances or perquisites in the form of clothing, mid-day meals etc. The payment in kind and perquisites were evaluated in cash and added to both income and expenditure of the agricultural labour households. Evaluation of such payment was made on the basis of local retail prices.[2]

The concept of 'levels of living' is comprehensive and includes the scale of preferences and satisfaction of wants of individual members in a family as also collective wants of groups and communities. In the Second Agricultural Labour Enquiry Quantitative measurement of levels of living is confined to family size, earning strength and expenditure on different consumption items, and these as such are only rough

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1. Report on the Second Agricultural Labour Enquiry, 1956-57, p.41.

2. Ibid., p.41.

indicators of the levels of living of agricultural labour house-holds.[1]

TABLE 1.15

Average Annual Consumption Expenditure of Agricultural Labour Families (excluding Ceremonials) by Consumption Groups in U.P. in 1950-51

Period	Total Expenditure (Rs.)	Percentage of Total			
		Food	Clothing & Footwear	Fuel and lighting	Services & Miscls.
1950-51	548	84.7 (464)	7.8 (43)	1.1 (6)	6.4 (35)

Note: Figures within brackets indicate the absolute expenditure in rupees.

Source: Report on the Second Agricultural Labour Enquiry, 1956-57, p.42.

Out of the average annual expenditure of Rs.548 during 1950-51, a large proportion (84.7 per cent) was spent on food alone by the agricultural labour households in U.P.

For a quantitative assessment of levels of living, consumption expenditure is a better indicator than income. As the size of a family is not a constant factor, the per capita expenditure gives a better idea of the levels of

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1. Report on the Second Agricultural Labour Enquiry, 1956-57, p.42.

living of agricultural labour households. A study of the distribution of agricultural labour households by annual per capita expenditure groups for U.P. during 1950-51 shows that 63.8 per cent of agricultural labour households are in the per capita expenditure group of Rs.51-200.[1]

Apart from income, an important factor determining the level of living is the size of the family. Other things being equal, a higher level of living is generally associated with a smaller size of family and vice-versa.[2]

The nature and extent of indebtness is an indicator of economic position of any section of population. Indebtedness reflects inadequacy of households income in meeting household expenditure. If a larger part of debt is incurred for household consumption expenditure, this is an indication of acute poverty. In U.P. 87.5 per cent of the debt was incurred for consumption purposes by agricultural labour households during 1950-51. This shows acute poverty of agricultural labourers. Around 22 per cent of total agricultural labour households were heavily indebted.[3]

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1. Report on the Second Agricultural Labour Enquiry, 1956-57, p.47.
2. Ibid., p.48.
3. Ibid., p.50.

Since district-wise data on employment, income and debt of agricultural labourers for the period 1950-51 are not available, in this chapter an attempt has been made to evaluate the conditions of agricultural labourers in U.P. as a whole.

CHAPTER II

The U.P. Zamindari Abolition and Its Effects On Agrarian Relations

The Uttar Pradesh Zamindari Abolition and Land Reforms Act 1950 received the assent of the President of India in January 24, 1951. The vesting order was issued on July 1, 1952. In consequence of this, all rights, titles and interests of all the intermediaries were terminated and ceased from the date of vesting. However land cultivated by an intermediary as his "Sir" (share-cropped) or "Khudkasht" (self-cultivated) land was converted into his Bhumidhari (ownership).

The Zamindari Abolition Act did not provide for the right of resumption nor did it fix a limit on the area under personal cultivation of Zamindars. Therefore, all the occupants of land, Zamindars and secured or unsecured tenants, were to continue in possession of land they were cultivating at the time the reforms were enacted.[1]

According to Baljit Singh before the abolition of the Zamindari system there were no less than forty different

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1. U.P. Zamindari Abolition and Land Reforms Act, 1951, Allahabad, 1951.

types of land tenures in U.P.[1] This caused such confusion that even the protected tenant failed to understand and enjoy their full rights. The U.P. Zamindari Abolition and Land Reforms Act, 1950, replaced the multiplicity of tenures by three types, (1) Bhumidhar, (2) Sirdar and (3) Asami. Every intermediary whose rights, title or interest in any estate was done away with under the provision of this Act became entitled to receive compensation in the shape of bonds or cash due from the date of vesting and interest on the amount of compensation at the rate of 2 1/2 per cent.

Bhumidhar: This category consisted of owners of land formerly under personal cultivation of the ex-zamindars and recognised as their Bhumidhari by conversion. Besides, the Act provided for the acquisition of Bhumidhari rights by any tenant, sub-tenant and occupier without consent under the former law, by paying ten times their annual rent to the State. A bhumidhar had a permanent, heritable and transferable right to his holding. The land revenue of the bhumidhars, who acquired the right by paying ten times the land revenue, was fixed at 50 per cent of the rent paid by them earlier.[2]

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1. Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.74.

2. B.S. Sidhu, Land Reforms, Welfare and Economic Growth, Bombay, 1976, p.104.

Sirdar: Sirdars were tenants, sub-tenants or occupants of land without consent who had not become bhumidhars. Sirdari interest was permanent and heritable but not transferable. A Sirdar was to pay as land revenue to the State the amount he formerly paid as rent to the Zamindar.[1]

Asami: These were former tenants and sub-tenants on grove land, sub-tenants of mortgagees or those who held pasture land from the Gaon Samaj. The Asami rights were heritable but not permanent and transferable. The Act provided for ejectment of an Asami under certain conditions and he had to pay such rent as may be agreed upon between himself and the landholder.

Besides the above three tenures, a temporary right called Adhivasi was also created, in the beginning, for those who were tenants of Sir or sub-tenants or occupants and trespassers in actual possession of a holding. This right was to continue for a period of five years after the passage of the Zamindari Abolition Act and was to be converted into bhumidhari on payment of 15 times the rent they had paid earlier. Subsequently, all adhivasis were declared Sirdars.[2]

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1. B.S. Sidhu, Land Reforms, Welfare and Economic Growth, Bombay, 1976, p.104.

2. Baljit Singh & Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.75.

The Act also established Gaon Samaj, each being a corporate body consisting of all the adults of village. It functioned through a land management committee for the management of lands not comprised in any holding or grove, and forests within the village boundaries.

The Research Programme Committee of the Planning Commission sponsored a phased programme of the studies of the impact of zamindari Abolition and Land Reforms on landowners, tenants and agricultural workers in U.P., under the supervision of Baljit Singh and Shridhar Misra. The investigation covered the entire State excepting the division of Kumaun and Uttarakhand. Eightyone sample villages were selected for study from nine divisions. Twentyseven out of eightyone sample villages were in the Western U.P., eighteen in the Central U.P., nine in Bundelkhand and twentyseven in the Eastern U.P. The survey covered a period of 12 months from June 1960 to May 1961.

The study showed that after the Zamindari Abolition, in U.P. as a whole, one third of the total area under agricultural holdings was held under bhumidhari tenures, a little less than two third under Sirdari and less than one per cent by asamis. Figures for the State and for the sample villages are given in the following table.

TABLE 2.1

Classification of Holdings After Zamindari Abolition

Type of tenure under	All Village in U.P. (area in acres)	Percentage of total area	Sample villages (area in acres)	Percentage of total sample villages
Bhumidhari	15118697	33.28	22599.42	36.95
Sirdari	29952635	65.92	37954.03	62.05
Asami	362961	0.08	611.44	1.00
Total	45434293	100.00	61164.89	100.00

Notes: (1) The area figures both for the State as well as sample villages are the averages for three years, viz. 1957-58 to 1959-60.

(2) Figures for the State are computed from Rental and Holding Registers of the Board of Revenue by Baljit Singh & Misra.

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.121.

Within this board distribution there are marked variations by administrative divisions and districts.

TABLE 2.2

Administrative Divisions of Uttar Pradesh Arranged by Percentage of Bhumidhari Area to total Area under Holdings (1959-60)

Administrative Divisions of the State	Total area of Holdings (in acres)	Total Bhumi-dhari Area (in acres)	% of Bhumidhari Area to total area of holding
Meerut	4149790	2511975	60.53
Varanasi	4162763	2112370	50.74
Gorakhpur	5179850	2132538	41.17
Jhansi	5141533	2025804	39.40
Agra	4367664	1551768	35.53
Allahabad	4892592	1378146	28.17
Faizabad	6010494	1395765	23.22
Rohilkhand	6141952	1214451	19.77
Lucknow	5696343	1107695	19.45
Total of the State excluding hill district	45742981	15430512	33.73

Source: Rental and Holdings Register, Revenue Department, Quoted by Baljit Singh & Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.229.

The above table shows the percentage of bhumidhari area to total area under different tenures in different administrative divisions of U.P. The Meerut division shows the highest percentage of the area under bhumidhari in 1959-60. But in the Agra division the percentage of area under

bhumidhari was only 35.5 in 1959-60. This percentage was less than 20 in the divisions of Rohilkhand and Lucknow. Meerut, Muzaffarnagar, Saharanpur and Dehradun (Meerut division) were the districts with highest percentage of area under bhumidhari in Western U.P. In Eastern U.P. Jaunpur and Varanasi had highest percentage of their landholdings under bhumidhari. This shows that the districts with higher percentage of area under bhumidhari do not fall into any regional pattern. But there are correlations between these districts and the area under irrigation and double cropping, because these districts also have a higher percentage of area under irrigation and double cropping.

There were two methods of acquiring Bhumidhari rights. (i) by conversion of the unlet Sir and Khudkasht as well as groves of the former Zamindars into bhumidhari (ii) by acquisition through payment of a certain multiple of the rental to the Govt. In Uttar Pradesh just after Zamindari abolition, out of the total area under bhumidhari 45% was acquired through conversion and 55% through payment of the multiple of rental to the Government.

The area converted into bhumidhari depended on the extent to which Zamindars were cultivating their own holdings immediately before zamindari abolition. This was the main reason for the wide variation in the proportion of the total

area of holding converted into bhumidhari in different districts. At one extreme were the districts of Rampur and Bahraich where only about 2% of the total agricultural area was converted into bhumidhari and at the other was the Meerut district where more than 40% of the total has been so converted.[1]

The average size of holdings varied from region to region, occupation to occupation and caste to caste. In each region, occupation or caste group the holdings of the bhumidhars were the largest and those of non-tenure holders the smallest, as shown by the following two tables.

TABLE 2.3

Average Size of Cultivated Holdings in the Sample Villages Before Zamindari Abolition in U.P.

Cultivating Households Present tenures	Area per Household (in acres)
Bhumidhars	12.36
Sirdars	6.49
Asamis	5.80
Non-Tenure Holders	3.53

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.50.

1. Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.124.

TABLE 2.4

Average Size of Cultivated Holdings of Sample Households After Zamindari Abolition (in acres) (Average for the years 1957-58 to 1959-60)

	Bhumidhars	Sirdars	Asamis	Non-Tenure Holders
A. Region				
i. Western	8.99	7.60	7.63	5.39
ii. Central	6.62	5.09	3.78	3.74
iii. Bundelkhand	19.08	7.96	7.50	-
iv. Eastern	9.68	4.65	1.75	1.65
B. Occupation				
i. Farmers	22.14	11.83	-	-
ii. Peasants	8.44	6.12	2.80	-
iii. Agricultural Labourers	0.79	1.59	5.81	3.53
iv. Miscellaneous	5.88	3.03	1.14	1.41
C. Caste				
i. Upper Caste Hindus	14.80	9.08	8.09	12.00
ii. Scheduled Caste	8.16	3.83	4.15	1.58
iii. Others	7.91	5.57	5.80	5.61
TOTAL	10.48	5.13	5.39	3.45

Source: Baljit Singh & Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, p.145.

TABLE 2.5

Estimate of percentage Distribution of All Cultivating Households in Sample Villages and of the Area Cultivated by Them after Zamindari Abolition in U.P.(1960-61)

By Size of Cultivated Holdings And By Principal Tenures of Households

Tenure	Bhumidhars		Sirdars		Asamis	
Size of Holding	House-holds	Cultiva-ted area	House-holds	Cultiva-ted area	House-holds	Cultiva-ted area
Less than 5 acres	36.60	9.33	56.16	22.28	56.75	25.86
5 to 15 acres	45.53	36.55	35.71	46.81	36.49	50.45
15 acres & above	17.87	54.12	8.13	30.91	6.76	23.69
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

Tenure	Non-Tenure Holders		All	
Size of Holdings	House-holds	Cultivated area	House-holds	Cultivated area
Less than 5 acres	82.00	42.81	51.89	18.25
5 to 15 acres	14.00	27.75	37.39	43.55
15 acres & above	4.00	29.44	10.72	38.20
TOTAL	100.00	100.00	100.00	100.00

Source: Baljit Singh & Shridhar Misra, A Study of Land Reforms in U.P., p.146.

The above tables clearly show that the cultivated area is not only unequally distributed as between various social groups and economic classes but within each category also there is a marked inequality in land distribution between different households. While bhumidhars have on the average the largest size of holdings, 37% among them cultivate less than 5 acres each and have less than 10% of the area cultivated by all the bhumidhars taken together; and less than one-fifth among them (17.87%) cultivate more than half (54.12%) of the total area cultivated by all the bhumidhars. More or less the same is true to sirdars among whom the proportion of households having less than 5 acres for cultivation is even larger at 56.16% and they cultivate only 22% of the total area cultivated by the Sirdars. On the other hand 8% of the households of Sirdars cultivate 31% of the total area cultivated by Sirdars. The asamis and non-tenure holders are in no better position and even among them, while the average size of holding is small, a few cultivate more than one-fourth of the total area cultivated by this group.

The statistics given in table 2.3 show that after Zamindari Abolition in U.P. the distribution of cultivated holdings became less inequitable than it was earlier. Smaller cultivators gained as a result of the break-up of large estates. This effect was, however, very limited and the

redistribution of cultivated holdings has not taken place to any substantial extent. The changes in the distribution of ownership holdings can not, however, eclipse the fact of glaring inequalities that have persisted till the early 1980s. A detailed discussion of this aspect has been attempted in the section on the consequences of the Legislation on Ceilings, in Meerut and Agra Divisions.

Share-cropping and Sub-tenancy

Before Zamindari abolition there was a marked hierarchy of rights in land. No single person had complete rights on a given plot of land. Peasants caught up in cycles of indebtedness were compelled to sell the particular right. They lost their rights in land and became rightless share-cropper. These share-croppers, though alienated from means of production, were not owned or forced to cultivate by others as serfs under extra-economic coercion. They were in a sense free workers. But they were not converted into wage workers and were retained by the prevalent class structure as 'base tenants', who had to undertake production on their own account based primarily on family labour, while being compelled to surrender the surplus to those who had varied rights upon the cultivated land.[1]

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1. Shapan Adnan, 'Classical and Contemporary Approaches to Agrarian Capitalism', Economic & Political Weekly, Vol.20, No.30, July 27, 1985, pp.57-58.

The U.P. Zamindari Abolition and Land Reforms Act failed to recognise share-cropping as sub-tenancy cultivation and it was reported under the cultivation of the principal tenure holders. Obviously the area cultivated by share-croppers should have been actually included in the area under sub-tenancy.

The Zamindari Abolition and Land Reforms Act had left the backdoor open for sub-tenancy cultivation through the practice of share-cropping. The act did not contain any law regarding the problems of share-croppers. Baljit Singh & Shridhar Misra in their study of the extent of share-cropping in the sample villages of U.P. found that before Zamindari Abolition (1950-51) 9.01% of the total cultivated area of the sample households was under share-cropping. In 1960-61 this percentage stood at 8.67%. Thus the decline in the percentage of share cropping has been only by 3.77%. This tenacity of the proportion of share-cropping is a serious weakness of the existing land system. The study by P.C. Joshi[1] has suggested that the decline in the extent of share-cropping has occurred much more as a result of resumption of land by landlords for the ostensible purpose of self-cultivation than of acquisition of ownership rights by former tenants.

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1. P.C. Joshi, Land Reform and Agrarian Change in India and Pakistan, 1947: II, The Journal of Peasant Studies, Vol.1, No.3, April 1974, pp.334-335.

TABLE 2.6

Changes in the Pattern of Tenancy in U.P.

Item	1953-54	1961-62	1971-72
1. Households leasing out land			
(a) Number (in 000)	1012	914	1384
(b) Percent of total households	9.78	7.03	9.85
2. Area leased out			
(a) Area (in '000 acres)	1783	2036	2701
(b) Per cent of area owned	5.84	4.43	6.85
3. Area leased-in			
(a) ('000 acres)	3680	NA	5385
(b) Per cent area owned	12.05	NA	13.65

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation, p.296.

The above data show that the extent of leasing out in U.P. declined between 1953-54 and 1961-62. According to P.C. Joshi[1] the decline of tenancy in aggregative terms disguises

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1. Op.cit., pp.334-335.

the contradictory trends of agrarian change which can be broadly identified as follows:

1. The decline of the feudalistic, customary type of tenancy and its replacement by more exploitative and insecure lease arrangements or by self-cultivation through wage labour.

2. The increasing importance of commercial tenancy based on the rich and middle strata of the peasantry who are part-owners and part-tenants and possess resources and enterprise for dynamic agriculture.

3. The decline of feudal landlords and the rise of a class of commercially - oriented landlords, either functioning as owner farmers or utilising the mode of a new, non-customary type of tenancy for the pursuit of agriculture as a business proposition.

The operation of these tendencies leads to the decline of one type of tenancy (feudal) while the weightage of the other type of tenancy (commercial) simultaneously increases; the increasing importance of commercial tenancy accentuates class differentiation among the tenants and shifts the distribution of land in favour of the larger rather than the smaller cultivators.

Table 2.6, however, shows that during 1961-62--1971-72 the tendency of leasing out land has increased. During the period 1953-54--1971-72 the area leased out increased by more than 50 per cent, while the increase in area leased-in was slightly less (at 46%) than this. The increase in leased out area as percentage of owned area was much less marked. Ajit Kumar Singh has pointed out that the National Sample Survey estimate of area leased-in is almost double of the estimated area leased out. This suggests that households leasing out land tend to systematically under report the area leased out, because of legal implications.[1]

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1. Ajit Kumar Singh, The Dynamics of Rural Transformation, Lucknow, 1984, p.296.

TABLE 2.7

Distribution of Sample Households And the Area Taken by Share-Croppers After Zamindari Abolition by Size of Holdings and Tenures in U.P. During 1960-61

Size of Holdings	Households			Area		
	Total	Taking land as share cropp-ers	Percentage of culti-vators as share croppers to total cult-vators	Total Hold-ing (acres)	Holding taken as share croppers (acres)	Percentage of area under share cropping to total area
Less than 3 acres	239	74	30.96	381.26	66.98	17.59
3 to 10 acres	362	81	22.38	1957.94	237.13	12.11
10 to 20 acres	109	12	11.01	1389.07	74.80	5.38
20 to 40 acres	44	6	13.64	1142.14	100.26	8.78
40 acres and above	11	0	0.00	657.59	0.00	0.00
Total	765	173	22.61	5528.00	479.17	8.67
Principal Tenures						
1. Bhumidhars	235	8	3.40	2463.97	11.49	0.47
2. Sirdars	406	61	15.02	2492.69	83.62	3.35
3. Others	124	104	83.87	571.34	384.06	67.22
Total	765	173	22.61	5528.00	479.17	8.67

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, p.191.

Most of the share-croppers in U.P. are petty cultivators, asamis and non-tenure holders. Nearly 31% of the cultivators having 3 acres were reported to be cultivating as share-croppers and 18% of their total holding was held as such. The proportion of the cultivators cultivating as share croppers declined with an increase in the size of holding. Only 3.47 per cent of the bhumidhars were found to have taken land as share-croppers and less than 0.5% of their total cultivated holdings were held as such. On the other hand 15% of the Sirdars and 84% of the asamis and non-tenure holders were found to be cultivating some land as share-croppers and the area held by them under this system amounted to 3.4 per cent and 67.2 per cent of the total area of their holdings respectively.

The above table shows that even medium and large cultivators resort to sharecropping because it is only through this practice that they can add a little more to their existing holdings.

Again, the extent of sub-letting can be seen from the following table.

TABLE 2.8

Distribution of Households by Principal Tenures and the Area Held and Cultivated By Them in U.P. During 1960-61

Principal Tenures	Number of House holds	Area held (acres)	Area in cultivated holding (acres)	Excess of cultivated area over area held	Percentage of the excess to cultivated area
Bhumidhar	235	2,469.81	2,463.97	-5.84	-0.24
Sirdars	406	2,459.50	2,492.69	+33.19	+1.33
Asamis	74	198.98	398.89	+372.36	+65.17
Non-tenure Holders	50	-	172.45		
TOTAL	765	5,128.29	5,528.00	399.71	7.81

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, p.141.

It is to be noted that the area cultivated by the households exceeds the area held by them by 7.8 per cent. It is only in the case of Bhumidhari that excess of cultivated area over area held is negative. In the case of sirdars this excess is not substantial and is limited to 1.3 per cent of their holdings. But it is as high as 65.17 per cent in the case of the remaining cultivating households which include Asamis as well as others who are found to be cultivating land without having any recorded tenurial rights over the area

cultivated by them. This shows the practice of sub-letting or share-cropping of land, without it being shown as such in the village papers. There was an open evasion of the law against sub-letting. Baljit Singh and Shridhar Misra found that, on the whole, nearly 7 per cent to 8 per cent of the total cultivated area was still surreptitiously sub-let, mostly to the agricultural labourers on the conditions that no entry for the sub-letting be made in the revenue records. Out of the 50 sample households which were found to be cultivating a holding, without any tenurial right, 48 or 96 per cent were reported to be of agricultural labourers.[1]

A crucial weakness of land reforms in U.P. has been the failure to prevent the practice of sub-letting. The share-croppers have to pay heavy rent, often as much as half of the produce, and are generally not allowed to remain on the same land for any length of time. The system of share-cropping is, highly unjust as it allows sub-letting indirectly in a manner that results in the exploitation of the actual tiller of the soil more than would be possible under direct sub-letting.

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1. Baljit Singh and Shridhar Misra, A Study of Land Reforms in U.P., p.143.

TABLE 2.9

Percentage of Area Under Sub-tenancy to the Total Area Under Agricultural Holdings

Region	Before Zamindari Abolition (average for the years 1948-49 to 1950-51)	After Zamindari Abolition (average for the years 1957-58 to 1959-60)
Western U.P.	6.05	2.10
Central U.P.	5.85	2.37
Bundelkhand	9.22	1.11
Eastern U.P.	11.53	2.22

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, p.158.

After Zamindari abolition land legislation has sought to restrict the right to sub-let. Even then in 1960-61 nearly 2 per cent of the total area under agricultural holdings in U.P. was found to be under the occupation of different types of sub-tenants. Table 2.9 shows that in Western U.P. 6.05 per cent of the total area under agricultural holdings was under sub-tenancy before the abolition of Zamindari. There has been a fall in this percentage after Zamindari abolition. In Western U.P. the extent of sub-tenancy was less compared to eastern U.P. and Bundelkhand before Zamindari abolition. Even after Zamindari

abolition the extent of sub-tenancy in western U.P. was less compared to Eastern and Central U.P.

Since 1960-61 the pattern of land tenancy is changing in a very significant way. The percentage of holdings cultivated by landed tenants (as opposed to landless tenants) increased from 87.51 per cent in 1960-61 to 95.11 per cent in 1970-71 in U.P.[1] According to Pranab Bardhan in many states there is a distinct shift away from the smaller tenant cultivators, particularly in areas of rapid growth in agricultural production. For example, according to NSS data, while about 12 per cent of all holdings reporting any area under tenancy in Punjab (including Haryana) belonged to the below 2.5 acres size class of operational holdings in 1960-61, the corresponding percentage in 1970-71 was only about 6 per cent. Taking a longer time period, while 39 per cent of all holdings reporting any area under tenancy in Punjab belonged to the below 5 acres size class of operational holdings in 1953-54, the corresponding percentage in 1970-71 was 25.5 per cent.[2]

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1. Pranab Bardhan, 'Variations in Extent and Forms of Agricultural Tenancy-II', Analysis of Indian Data across Region and Over Time, Economic and Political Weekly, Sept. 18, 1976, p.1544.

2. Ibid., p.1545.

Again Pranab Bardhan shows on the basis of Farm Management Survey data for Ferozepore (Punjab) that the concentration index of (net) leased in area by size class of farms went up between 1956-57 and 1969-70. The average tenant has now a much bigger and better irrigated farm in Ferozepur in 1956-57 the size of average farm for the whole (cost Accounting) sample was 23 acres, while that for a primarily tenant farm (those having half or more of the farm land leased in) was 19 acres but in 1969-70 the corresponding average sizes were 29 and 28 acres respectively.

A major reason for the increase in the concentration of tenancy might have been a large scale eviction of small tenants. Where small tenant have not been evicted by landlords, economic pressures may have forced them out of cultivation and made them join the swelling ranks of agricultural labourers, particularly in view of the increased costs and credit-intensity of new agricultural technology dependent on privately controlled irrigation (pumps and tubewells) and purchased inputs (fertilisers and pesticides) in the context of a highly imperfect credit market. The study in Gujrat by Vyas (1970) and that of Bandyopadhyay (1975) in West Bengal show that in the agriculturally more progressive and better irrigated areas a new class of large farmer-entrepreneurs are accounting for an increasing share

in total leased-in area.[1] This shows a tendency of capitalist development in agriculture and concentration of productive resources in hands of a few producers of large size.

Since Western U.P. is agriculturally more progressive and has better irrigation facilities, on the basis of above studies in Punjab, Gujrat and West Bengal we can broadly assume that concentration of leased-in area in the hands of rich peasants might have also occurred in this region. But no firm conclusion can be arrived at unless detailed data are collected on these aspects covering the region of Western U.P.

AGRICULTURAL LABOURERS

The position of the agricultural labourers in U.P. can be seen from the fact that out of some 14000 rural households studied by Singh and Misra nearly 2300 (79 share-croppers and 2207 casual and regular farm workers), i.e. 16.43 per cent were those of agricultural labourers. Out of these only 445 i.e. less than one-fifth (19.35 per cent) had some land to cultivate. Again, out of 149 sample cultivating households of agricultural labourers as many as 48 (32.22 per cent) were

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1. Op.cit., p.1545.

found to be without any legal right to their holdings.[1] Applying this ratio to all households of agricultural labourers in the sample villages it was found that only 13.13 per cent of such households had a recorded right over their holding although as many as 19.35 per cent had a cultivated holding.[2]

The problem of landless workers was found by the Planning Commission to be intractable since, in its opinion, Scheme of land distribution were not likely to benefit them substantially as the first claim to any land available for distribution was to be that of tenants.[3] After the Zamindari abolition out of 9.5 million acres vested in the Gaon Samaj in U.P. in 1959, 3.76 million acres were available for allotment to individual cultivators. But actually not more than 8 per cent of the area available for allotment or a total of 2.7 lakhs acres has been allotted to 1.01 lakh households of whom 63,000 households belonged to the category of landless agricultural labourers. These latter have been

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1. Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.145.

2. Ibid., p.143.

3. Planning Commission, The First Five Year Plan, Chapter 13, p.193.

allotted a total area of 1.61 lakh acres. This cannot be regarded as satisfactory as it has hardly touched even the fringe of the problem. The study by Singh and Misra shows that there were nearly four million landless agricultural workers in the State in 1959 and the allotment of land by the Gaon Samaj had not benefited even two per cent of them.[1]

The abolition of Zamindari resulted in breaking up of large estates in anticipation of the ceiling on agricultural holdings and adoption of personal cultivation. This resulted in increasing the insecurity of employment of agricultural labourers. Data collected by Singh and Misra reveal that the average number of permanent farm servants per household given such employment declined from 2.24 before Zamindari abolition to 1.62 in 1960-61.

Thus Zamindari abolition changed the status of tenants into owners but landless workers benefited little by this change.

The above discussion shows that the Uttar Pradesh Zamindari Abolition and Land Reforms Act (1951) replaced the multiplicity of tenures by three types, the Bhumidhar, the

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1. Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.111.

Sirdars and the Asami and after Zamindari abolition in U.P. the distribution of cultivated holdings became less inequitable than it was earlier. But still there are marked inequalities in the distribution of land holdings. One of the weaknesses of Land Reform Act was that it failed to check the practice of sub-tenancy cultivation through the practice of share-cropping. This resulted in the exploitation of small and marginal peasants and landless labourers. There has been a decline in the proportion of land under share-cropping between 1953-54 and 1961-62 but this decline occurred much more as a result of resumption of land by landlords for the purpose of self-cultivation, than of acquisition of ownership rights by the former tenants. Due to the Green Revolution there has been a shift in the pattern of share-cropping especially in Western U.P. Now the rich peasants are leasing-in land from the marginal and small peasants. Since the marginal and small peasants have low bargaining capacity, in this bargain, they are being exploited by rich peasants. The Zamindari abolition has changed the status of tenants into owners to some extent but landless workers have not benefited by this change as they were outside the ambit of being either owners of land or hiring it on rent. The essential weakness of the Scheme of land reforms was that it did not envisage a redistribution of land aiming at

benefitting the poorest and the weakest sections in the agrarian sector.

CHAPTER III

Agricultural Change Since 1951: Cropping and Irrigation

After India became independent and land reforms were implemented significant agricultural changes have occurred in Uttar Pradesh. These changes are more marked in Western U.P. There has been a rapid expansion in the area under cultivation till 1971. But as the pressure of population exhausted the land base, production could increase only by raising the productivity per hectare of net cultivated area. A new technology, combining high yielding varieties of seeds with a package of complementary inputs, was introduced in 1966 for raising the food-grains production of India. In U.P., the initial stage of this dynamic process of change surfaced mainly in the Western region in the early 1970s but by the middle of the decade it became pervasive over the entire State.

CROP PATTERN:

Notable changes occurred in the crop pattern in both Western and Eastern parts of U.P. The cropping pattern in the regions of U.P., though largely dominated by foodgrain, reveals certain important variations region-wise. In West U.P. the degree of commercialisation is greater as compared to East U.P. It mainly specialises in the production of wheat and sugarcane. In the following section we shall

examine the detailed changes in crop pattern on the basis of district-wise data contained in the Season and Crop Reports and 'Uttar Pradesh Mein Mukh Fasloon Ke Ankde' published by the Govt. of Uttar Pradesh. Changes in crop pattern as a result of expansion in irrigation facilities will also be discussed.

TABLE 3.1

Crop Pattern in Uttar Pradesh before Zamindari Abolition by Regions
Percentage distribution of area under major crops by regions before Zamindari abolition (1951-52)

Crop	REGIONS				
	Western	Central (Lucknow division only)	Bundel-Khand	Eastern (Banaras & Gorakh-pur only)	Total
1. Sugarcane	10.63	6.44	0.41	4.97	6.24
2. Wheat	22.03	18.56	18.67	8.86	16.50
3. Paddy	6.90	16.26	4.70	32.83	17.31
4. Barley	6.47	11.28	2.53	15.09	9.35
5. Pulses	10.61	9.40	34.09	6.02	12.07
6. Millet	15.51	9.51	20.24	2.19	10.85
7. Maize	4.15	4.13	0.59	3.33	4.23
8. Oil Seeds	2.10	2.97	6.94	0.76	2.28
9. Potato	0.35	0.51	0.05	0.54	0.47
10. Fibres	1.45	0.75	0.63	0.79	0.98
11. Miscella-neous	19.80	20.19	11.15	24.62	19.78
TOTAL	100.00	100.00	100.00	100.00	100.00

1. Commercial crops	36.56	29.23	26.70	15.92	26.47
2. Others	63.44	70.77	73.30	84.08	73.53
TOTAL	100.00	100.00	100.00	100.00	100.00

Source: Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.62.

Commercialisation of agriculture may be measured by the extent of cultivation of the commercial crops consisting of sugar-cane, wheat, oilseeds, potato and fibres. These are the main commercial crops although quite a substantial proportion of wheat is retained by the cultivator for consumption and use as seed. The above table shows that commercialisation of farming for all parts of U.P. taken together had not gone beyond 26% to 37% of the cropped area during 1951-52. Commercial crops occupied nearly 37% of the cultivated area in Western Uttar Pradesh. The extent of commercialisation was relatively less in other regions of the State. It shows that primarily before the abolition of Zamindari agriculture in U.P. was based on subsistence farming and there was marked regional variations in case of commercial farming.

Baljit Singh has worked out the changes in the crop-pattern for U.P. as a whole on the basis of averages for three years before Zamindari abolition (1948-49 to 1950-51) and for three years ending with the year 1959-60 i.e. (1957-58 to 1959-60). There had been a general increase in all crops and in the total cropped area with the exception of barley and pulses. The area under wheat increased by 16% and that under paddy by 12%. The area under millet increased by less than 1% while that under barley declined by 8% and under pulses by 2.5%. But the largest increase was in cultivation of maize whose area increased by about 34%. The area under the six principal food crops taken together increased by about 7% only and their proportion in the total cropped area declined from 72.65% before Zamindari abolition to 71.56% after Zamindari abolition.

The area under commercial crops increased substantially. The area under sugarcane increased by 31%, under oilseeds by 36%, potatoes by 37% and under fibres by nearly 40%. There is little doubt about the increasing commercialisation of farming in the post Zamindari abolition period. According to Baljit Singh this has been due probably more to changes in the agricultural price structure and other factors rather than to Zamindari abolition.

The crop pattern, however, differed from region to region. In the sample Villages of the Western districts that were covered by the Survey conducted by Baljit Singh, 21% of the total cropped area was found to be under wheat during 1959-60, while this percentage was only 12 for Eastern districts. For paddy the percentage was 30 and 6.7 for Eastern and Western districts respectively. The inferior food crops - millets and bejhar - occupied 34% of the cropped area of the sample villages of Western districts and 8% of that in the Eastern districts. The commercial crops consisting of sugarcane, potatoes, oilseeds and fibres occupied more than 10% of the total cropped area in the Western districts and about 4.5% in the Eastern Districts.[1]

Crop Pattern in U.P. Since 1951

Change in the cropping pattern from foodgrain crops to commercial crops shows the extent of commercialisation. Since this shift has taken place in the case of farmers having large landholdings, small and marginal farmers have not been benefited from this shift.

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1. Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, Calcutta, 1964, p.169.

TABLE 3.2

Trends in Cropping Pattern in U.P.

Crop	Area under major crops as percent of gross cropped area						
	1950-51	55-56	60-61	65-66	70-71	75-76	80-81
Rice	19.3	17.9	19.3	19.1	19.1	20.1	21.5
Jowar	4.7	4.2	4.1	3.9	3.2	3.1	2.8
Bajra	5.2	5.3	5.0	4.5	4.8	4.4	4.0
Maize	4.2	4.6	4.9	5.3	6.5	6.0	4.9
Wheat	16.6	19.2	18.1	18.6	25.5	27.3	33.0
Cereals	63.8	64.1	63.5	61.1	67.8	68.4	71.7
Gram	12.2	12.9	11.8	11.7	9.0	7.5	6.1
Pulses	21.8	21.3	20.9	20.4	16.1	13.7	11.6
Total food grains	85.6	85.4	84.4	81.5	83.9	82.1	83.3
Sugarcane	5.1	5.2	6.1	6.8	5.8	6.2	5.5
Oilseeds	1.7	2.1	2.1	3.1	3.0	3.8	3.6
Other crops	7.6	7.3	7.4	8.6	7.3	7.9	7.6
All crops	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation, The Case of Uttar Pradesh, 1951-81, p.88.

The above table shows that the extent of shifts in the cropping pattern were moderate till 1965-66 and the cropping pattern remained more or less stable. Upto this period wheat and maize experienced a favourable shift and coarse grains

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like jowar and bajra as well as pulses a negative shift. Between 1960-61 and 1965-66 area under non-foodgrain crops showed a significant increase. The introduction of HYV (high yielding variety) seeds disturbed the stability of the cropping pattern and, since 1965-66, one observes marked shifts in the percentage of area under different crops; the tendency is still continuing. Particularly sharp shifts have taken place in favour of wheat which occupied one-third of the gross cropped area in 1980-81 in comparison to nearly 17 per cent in 1950-51. Percent of area under rice has also gone up to some extent, though it has been displaced from the first position it was occupying earlier. The gain in area by wheat and rice has been largely at the cost of pulses and coarse grains. The weightage of cereals and foodgrains in the total cropped area has, however, gone up. Thus, the shift in favour of commercial crops witnessed in the early sixties has been arrested.[1]

The table 3.3 given below shows shifts in crop pattern at regional level. Wheat crop has shown a remarkable increase in the proportion of cropped area in all regions, the increase being most marked in East U.P., traditionally a rice growing area. The introduction of HYV seeds of wheat and the

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1. Ajit Kumar Singh, The Dynamics of Rural Transformation, 1951-81, p.87.

expansion in the source of assured means of irrigation throughout the State has made cultivation of wheat crop possible on a wider area. Percent area under rice also shows marked increase in West U.P. and Central U.P., moderate increase in East U.P. and Bundelkhand, but a decline in the Hill region. Among coarse grains barley, jowar and bajra show marked negative shifts in all regions, while maize recorded a positive shift. The share of total cereals in cropped area has gone up in all regions. Pulses, however, show a very marked downward shift in area in the three plain regions, and a moderate decline in Hill region and Bundelkhand. Percent area under total food-grains has recorded a negative shift in the three Plain regions, but an increase in the other two regions. Sugarcane area has declined in East U.P., but shows a positive shift in West U.P., Central U.P. and the Hill region. Area under oilseeds, however, declined in Hills and Bundelkhand, but shows a positive shift in the other three regions. It was a more marked positive shift in central U.P. thus, the increase in the percent area under superior cereals has been mainly at the expense of inferior cereals and pulses. In two regions, western and Central U.P., commercial crops have also gained at the expense of these crop groups.

TABLE 3.3

Shifts in Cropping Pattern at the Regional Level in U.P. (1950-53 to 1976-79)

Crop	Shift in percent area under the crop (in percent points)					
	Western Region	Central Region	Eastern Region	Hill Region	Bundelkhand	Uttar Pradesh
Paddy	+ 4.0	+ 4.7	+ 4.6	- 2.0	+ 1.3	+ 2.4
Jowar	- 3.5	- 2.4	- 0.5	- 0.1	- 2.6	- 2.0
Bajra	- 3.3	- 1.6	+ 0.3	-	- 1.0	- 1.4
Maize	+ 2.1	+ 1.1	+ 0.1	+ 1.2	+ 0.3	+ 1.0
Wheat	+11.3	+12.1	+15.3	+ 4.8	+ 8.1	+12.5
Barley	- 3.9	- 6.5	- 7.5	- 7.1	- 1.1	- 5.6
Total cereals	+ 6.3	+ 5.4	+ 6.5	+ 0.4	+ 4.1	+ 5.7
Pulses	-13.2	- 9.2	- 6.9	- 0.3	- 0.2	- 8.7
Total food grains	- 6.5	- 3.7	- 0.4	+ 0.2	+ 2.0	- 2.9
Sugar-cane	+ 2.6	+ 0.2	- 0.2	+ 3.0	-	+ 1.2
Oilseeds	+ 2.3	+ 3.6	+ 0.6	- 0.4	- 2.1	+ 1.5
Total non-food grains	+ 6.5	+ 3.7	+ 0.4	- 0.2	- 2.0	+ 2.9

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation 1951-81, p.90.

Ajit Kumar Singh has divided the period 1951 to 1981 into pre-Green Revolution and post-Green Revolution period. The period 1950-51 to 1965-66 represents pre-Green Revolution period and 1965-66 to 1978-79 represents post-Green Revolution period.

TABLE 3.4

Trend rate of growth of area of major crops

(Per cent per annum)

Crop	Eastern U.P.			Western U.P.		
	1950-51 to 1978-79	1950-51 to 1965-66	1965-66 to 1978-79	1950-51 to 1978-79	1950-51 to 1965-66	1965-66 to 1978-79
Wheat	3.70	1.77	5.91	2.52	0.31	3.81
Rice	0.63	1.00	0.44	2.15	3.40	1.29
Bajra	0.88	1.32	0.40	-0.55	-0.93	-0.19
Jowar	-0.96	-1.45	-1.53	-3.94	-3.21	-4.97
Maize	0.80	0.66	0.07	2.78	2.22	1.50
Barley	-2.51	-1.01	-4.70	-2.73	-3.26	-0.56
Cereals	0.68	0.50	0.94	1.26	0.17	1.88
Pulses	-1.41	0.16	-2.73	-3.17	0.67	-6.75
Foodgrains	0.30	0.43	0.31	0.43	0.29	0.35
Oilseeds	2.00	4.56	0.83	4.82	6.08	2.57
Sugarcane	0.66	1.63	-0.05	1.67	2.74	2.61

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation 1951-81, pp.129-141.

WHEAT: The growth rate of wheat area were rather low in pre-Green Revolution period. In the post-Green Revolution period area under wheat has increased rapidly both in East and West U.P.

RICE: Area under rice has also shown an upward trend in both the regions and in both the periods. The growth rate of area were, however, generally lower in post-Green Revolution period as compared to pre-Green Revolution period.

BAJRA: In West U.P. area under this crop declined but area increased in East U.P.

JOWAR: Area under this crop declined in both the regions and in both the periods.

MAIZE: Area under this crop increased in both the periods but the rate of growth was slow in post Green Revolution period compared to pre-Green Revolution period.

BARLEY: Area under this crop shows a decline in both the regions.

CEREALS: Rates of growth of area under cereals are positive in both the regions and in both the periods. West U.P. shows rather high growth in area under cereals in Post-Green Revolution period.

PULSES: Area shifted away from pulses in the wake of introduction of HYV seeds of wheat and rice.

FOODGRAINS: The growth rates of area under foodgrains are low though positive in both the periods.

OILSEEDS: Area under oilseeds increased at a faster rate in pre-Green Revolution period compared to Post-Green Revolution period.

SUGARCANE: Pre-Green Revolution period witnessed fairly higher rates of growth of area under sugarcane. In the post-Green Revolution period growth rate of area under sugarcane was low in West U.P. compared to pre-Green Revolution period and it was negative in East U.P.

The area under superior cereals i.e wheat and rice have increased at fairly high rates in both the regions leading to a rapid growth of total cereals and foodgrains output. Area and output of pulses show stagnation or decline.

The trends in cropping pattern in U.P. as a whole show that it remained fairly stable during the period 1951-81 dominated as it was with foodgrain crops. In the early sixties, a shift in favour of non-foodgrain crops was observed. However, the introduction of HYV seeds in the mid

sixties not only arrested this trend but also brought about sharp shifts in the cropping pattern. Thus, superior cereals, particularly wheat and to some extent rice,have recorded favourable shifts in acreage at the cost of coarse grains and pulses. In the case of non-foodgrain crops the area under oilseeds has been continuously increasing, while area under sugarcane has experienced negative shift in the post-Green Revolution phase. The changes in the cropping pattern have been associated with the changes in yield and prices as well as irrigation, all of which tended to favour the cultivation of wheat crop.[1] Impact of irrigation on the cropping pattern has been discussed later in this chapter.

The cropping pattern in Western U.P. given in table no.3.4 and the cropping pattern of the districts of Agra and Meerut divisions given in the following three tables show more or less similar trends.

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1. Ajit Kumar Singh, The Dynamics of Rural Transformation, 1951-81, p.95.

TABLE 3.5

Compound Growth Rate of Area under Important Crops for the period 1950-51 to 1960-61 (Percent per annum)

Districts	Rice	Wheat	Pulses	Oilseeds	Sugarcane
Dehradun	1.4	-0.9	-5.3	-0.9	13.6
Saharanpur	3.0	-0.05	-2.5	2.5	5.3
Muzaffarnagar	1.9	0.37	-3.6	-9.7	3.9
Meerut	0.3	1.05	-2.3	-7.0	2.6
Bulandshahr	-2.7	2.08	-1.4	-5.6	3.8
Meerut Division	2.0	0.9	-22.4	-1.3	3.7
Aligarh	2.8	1.4	0.7	-9.2	7.8
Mathura	-6.4	3.7	0.4	-4.3	4.5
Mainpuri	4.7	1.0	1.4	3.9	-0.8
Etah	2.1	-0.01	1.8	13.0	2.6
Agra Division	3.8	1.6	1.1	1.3	4.5

Source: Uttar Pradesh Mein Mukh Fasloon Ke Ankde, 1950-51 to 1967-68, Part I, Directorate of Agriculture, U.P., 1979.

And Season and Crop Report, 1950-51 and 1960-61, Govt. of U.P., Lucknow.

Formula used for calculating compound growth rate:

$r = \text{Antilog } (1/t \log Y/A) - 1$

Y = Final figure
A = Initial figure
t = number of years.

The above table shows the districtwise compound growth rate of area under major crops during the period 1950-51 to 1960-61. During this period rice showed a positive percent per annum growth in most of the districts. Bulandshahr and Mathura showed negative growth rate and this negative growth is very much marked in Mathura district (- 6.4 per cent per annum) Mainpuri showed a significant increase in the area under this crop.

Area under wheat also showed an increase in most of the districts. Dehra-Dun, Saharanpur and Etah being the exceptions. But in these districts per cent per annum fall is not very marked. Mathura district showed a marked increase (3.7 per cent per annum) in the area under wheat.

Area under pulses showed negative growth rate in all the districts of Meerut division but the districts of Agra division showed positive growth rate.

Area under oilseeds showed marked negative growth in most of the districts. Saharanpur, Mainpuri and Etah being the exceptions.

Sugarcane showed positive increase in all the districts except Etah.

TABLE 3.6

Compound Rate of Growth of Area under Important Crops for the period 1960-61 to 1969-70

(Percent per annum)

District	Rice	Wheat	Pulses	Oilseeds	Sugarcane
Dehra-Dun	-0.96	3.52	0.85	-0.91	3.22
Saharanpur	-0.65	2.95	-6.60	7.60	1.80
Muzaffarnagar	2.80	2.89	-7.41	-0.04	2.41
Meerut	6.89	2.91	-3.94	-7.04	0.30
Bulandshahr	7.87	6.23	-3.87	2.54	-3.10
Meerut Division	1.42	3.46	22.81	5.03	0.74
Aligarh	10.39	5.94	-4.25	0.81	-3.32
Mathura	45.81	5.73	-4.06	-9.40	-1.67
Agra	16.33	5.66	-2.17	8.60	-3.73
Mainpuri	0.82	4.87	-2.38	4.30	-5.15
Etah	3.75	3.71	-2.41	1.06	-4.53
Agra Division	3.88	5.22	-3.05	2.06	-3.27

Source: Uttar Pradesh Mein Mukh Fasloon Ke Ankde, 1950-51 to 1967-68 and 1967-68 to 1980-81, Part I & II.

Season and Crop Report 1960-61 & 1969-70, Govt. of U.P., Lucknow.

The above table shows the compound growth rate of area under important crops for the period 1960-61 to 1969-70.

Area under rice crop increased in all the districts except in Dehra-Dun and Saharanpur. Even in these two

districts fall in the area under rice is not very significant. Increase in the area under rice is much more marked during 1960-61 to 1969-70 compared with the period 1950-51 to 1960-61.

Area under wheat showed an increase in all the districts. During 1960-61 -- 1969-70 area under this crop increased at a faster rate compared to the increase in the earlier decade.

Area under pulses showed negative per cent per annum growth in all the districts except Dehradun. During 1960-61 -- 1969-70 fall in the area under pulses is much more marked compared to the period 1950-51 to 1960-61.

During 1950-51 -- 1960-61 area under oilseeds declined in all the districts of Meerut division except Saharanpur but during 1960-61 - 1969-70 area under this crop declined in Dehra-Dun, Muzaffarnagar and Meerut district. Saharanpur and Bulandshahr showed an increase. During 1960-61 - 1969-70 area under oilseeds declined only in Mathura district in Agra division. But in the earlier decade Aligarh and Mathura districts showed a decline in the area under this crop.

Negative growth rate is observed in all of the districts of Agra division and Bulandshahr district of Meerut division in the area under sugarcane during 1960-61 -- 1969-70.

TABLE 3.7

Compound Rate of Growth of Area under Important Crops for the period 1969-70 to 1980-81

(Percent per annum)

District	Rice	Wheat	Pulses	Oilseeds	Sugarcane
Dehra-Dun	-	-	-	-	-
Saharanpur	2.21	2.14	-4.08	3.79	1.52
Muzaffarnagar	1.24	1.96	5.30	14.65	2.26
Meerut	-3.18	-1.88	-13.42	9.01	-0.03
Bulandshahr	3.34	1.68	-7.06	12.40	0.45
Meerut Division	1.05	1.89	-6.59	5.02	1.85
Aligarh	-1.61	2.59	0.07	21.55	-6.71
Mathura	-5.38	2.44	-4.71	13.33	-3.51
Agra	-3.52	0.85	-5.71	10.95	-13.50
Mainpuri	1.18	3.87	8.42	4.90	-11.12
Etah	1.18	2.50	-1.69	-1.50	-7.31
Agra Division	0.28	2.47	-21.81	8.22	-6.41

Source: Calculated from Uttar Pradesh Mein Mukh Fasloon Ke Ankde, 1967-68 to 1980-81, Part II, Directorate of Agriculture, Lucknow, and Season and Crop Report 1969-70 & 1980-81, Govt. of U.P., Lucknow, 1975 & 1983.

On the basis of the statistics given in the above three tables we can have an idea of the changes in the pattern of cropping in the districts of the Agra and Meerut divisions during 1951-81. These districts are considered agriculturally

developed districts compared to other districts of Uttar Pradesh. To study the changes in crop pattern only important crops e.g. rice, wheat, pulses, oilseeds and sugarcane have been taken into consideration. For the purposes of the present study per cent per annum growth rate of area for the period 1950-51 to 1960-61, 1960-61 to 1969-70 and 1969-70 to 1980-81 have been calculated on the basis of the detailed statistics provided in 'Uttar Pradesh Mein Mukh Fasloon Ke Ankde' and 'Season and Crop Report', 1950-51, 1960-61, 1969-70 and 1980-81.

Area under rice and wheat shows a greater percent per annum increase for the period 1960-61 to 1969-70 compared to the period 1950-51 to 1960-61. Area under pulses shows increase only in the districts of Agra division during 1950-51 and 1960-61, but thereafter it shows decline in all the districts of Agra and Meerut divisions. The area under oilseeds shows decline in most of the districts during 1950-51 and 1960-61. But declines in only few districts during 1960-61—1969-70. Area under oilseeds increased in all the districts, except Etah during 1969-70 - 1980-81. Area under sugarcane increased during 1950-51 - 1960-61 in all the districts, except Mainpuri, but thereafter it shows decline in most of the districts.

Therefore it can be concluded that the area under wheat and rice increased during post Green Revolution period at the

cost of pulses. Area under sugarcane declined in the post-Green Revolution period but the area under oilseeds has increased.

Differences in prosperity are no longer related to the size of landholding alone, but also to the type of crop a farmer is able to grow on his land. Sudha Pai[1] in her study of the North Eastern area pointed out that some poorer cultivators and Share-croppers reported that they could not afford to grow wheat and had to be content with inferior grains such as maize and jowar, since wheat required more water and fertilisers which they could not afford. In the absence of detailed data on the cropping pattern of different agricultural classes in our region we are not able to point out the impact of shifts in cropping pattern on different agrarian classes, though this aspect is of great significance. Somehow, most of the studies have pointed out that the shift from food crops to commercial crops is more marked in the case of lands owned by richer peasants.

IRRIGATION: Irrigation plays an important role in the agricultural development through its effects on the pattern

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1. Sudha Pai, Changing Agrarian Relations in U.P., New Delhi, 1986, p.98.

and efficiency of land use. The adoption of modern inputs like HYV seeds and chemical fertilisers too is intimately related to the availability of assured water supply.

Tube-well irrigation has been found to be ideal in Utter Pradesh plains due to the huge amount of groundwater found here in a series of sandy aquifers. Uttar Pradesh was a pioneer state in the use of tube-well technology in India. Construction of tubewells started here in 1931, when 1500 tubewells were installed in Meerut and Rohilkhand divisions[1].

In Uttar Pradesh real breakthrough in private tubewell irrigation was made after 1966-67 with the advent of HYV seeds. Between 1966 and 1980, the number of tubewells increased from a mere 5 thousand to nearly 13 lakhs or 260 times, private tubewells accounting for most of this increase. The tubewell irrigated area went up from 13.11 lakh hectares to 46.95 lakh hectares, recording a 358 percent increase. It was merely 21 percent of the net irrigated area in 1966-67 but rose to nearly 52 per cent by 1980-81[2].

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1. O. Coutinho and T.C. Sharma, 'Progress of Irrigation in Uttar Pradesh Plains: Inter-regional contrast, Agricultural Situation in India, Vol.XLI, No.11, Feb. 1987, p.888.

2. Ibid., p.888.

Net and gross irrigated area as a percent of net and gross cropped area respectively show a sharp improvement in all regions of U.P. between 1953 and 1978. Bulk of the improvement took place after 1966. Roughly half of the net cropped area in the state was under irrigated cultivation in 1981. In Western U.P. the proportion of net irrigated to net cultivated area has reached the high figure of 65.3 percent in 1978. It should be added that the effectiveness of the irrigation system in the state as a whole remains low as only 17 per cent of the area covered by irrigation system receives more than one watering in the whole year. Moreover, in years of acute drought many sources of irrigation tend to dry up[1].

TABLE 3.8

Net Irrigated Area as per cent of Net Cropped Area

Region	1953-56	1963-66	1975-78
Western Region	35.9	40.0	65.3
Eastern Region	36.5	36.2	44.0
Uttar Pradesh*	31.2	33.3	48.5

* Data for U.P. excludes Hill Regions

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation, 1951-81, p.72.

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1. Ajit Kumar Singh, The Dynamics of Rural Transformation, 1951-81, p.72.

TABLE 3.9

District-wise Growth of Irrigated Area as per cent of Cropped area in Western U.P. 1953-78

District	1953-56	1963-66	1975-78
Saharanpur	28.4	34.4	61.4
Muzaffarnagar	56.6	63.4	82.3
Bulandshahr	63.5	64.7	86.9
Meerut	65.8	71.8	86.9
Aligarh	58.1	61.4	85.4
Agra	29.8	33.0	53.9
Mathura	45.3	46.6	73.8
Etah	45.9	51.5	67.6
Mainpuri	51.9	50.5	75.3

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation 1951-81, p.74.

District wise growth of irrigated area shows wide variations. In 1953-56 more than 50 per cent of the total cropped area was under irrigation in Muzaffarnagar, Bulandshahr, Meerut, Aligarh and Mainpuri. This proportion was lowest in Saharanpur (28.4) in 1953-56. But all the districts show an increase in the area under irrigation over the period 1953-78.

Apart from the rapid quantitative expansion of irrigation system, certain qualitative changes of major importance have also been under way during this period. particularly noteworthy in this connection has been the relatively faster growth of assured and more effective means of irrigation, i.e. tubewells and canals[1]

TABLE 3.10

Changes in the Relative Importance of Different Sources of Irrigation in U.P. (Regionwise)

Period	Percent of net irrigated area covered by				
	Canal	Tube-wells	Other Wells	Other sources	All sources
Uttar Pradesh (Plains)					
1953-56	35.9	6.2	42.9	15.0	100.00
1963-66	40.1	13.6	34.2	12.1	100.00
1975-78	34.6	42.8	14.8	7.7	100.00
Western Region					
1953-56	51.7	——— 45.6 ———		2.6	100.00
1963-66	48.1	20.7	29.0	2.2	100.00
1975-78	31.4	52.3	13.7	2.6	100.00
Eastern Region					
1953-56	5.4	——— 66.5 ———		-	100.00
1963-66	14.4	11.0	50.2	24.3	100.00
1975-78	22.8	42.4	20.2	14.7	100.00

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation, 1951-81, p.78.

1. Ajit Kumar Singh, The Dynamics of Rural Transformation, 1951-81, p.77.

The above table shows that tubewells have become the most important source of irrigation over the years. The proportion of area irrigated by canals has declined in Western U.P. during 1953-56 to 1975-78 due to rapid expansion of tubewell irrigation, but shows an increase in Eastern U.P. The proportion of area irrigated by 'Other Wells' and 'other sources' has undergone a sharp decline in both the regions.

Since there is complimentarity between the use of modern inputs like HYV seeds and chemical fertilisers and the availability of water, the crop concentration in use of irrigation is likely to be associated with concentration in the use of other inputs. The notable breakthrough in the output of wheat that has been achieved in U.P. appears to be related to an interrelated set of factors favourable to this crop.

It can be observed from the above discussion that after mid sixties quantitative as well as qualitative changes have taken place in the irrigation system in U.P. These changes are more marked in Western U.P. compared to Eastern U.P. In this region the area under irrigation has substantially gone up in terms of acreage as well as proportion of cropped area, over the period 1951-81. The growing importance of

tube-wells as the major source of irrigation signifies that the quality of the irrigation system has improved tremendously in terms of efficiency and reliability. The introduction of HYV seeds in mid sixties made the farmers selective in the use of irrigation for certain crops. This accounted for the better performance of certain crops such as wheat. In short, the improvement in irrigation facilities has created favourable conditions for stability and growth of agricultural output in future.

CHAPTER IV

TECHNOLOGY AND AGRARIAN CHANGE IN WESTERN U.P., 1951-81

The scope for any further expansion of cultivated land has reached saturation point in Uttar Pradesh. This is evident from the fact that even under growing population pressure on land, the proportion of cultivable area that is being actually cultivated did not record any marked increase between 1951 and 1971. Therefore, to feed the growing population, intensification of agriculture has become one of the most important policy tenets of the govt. Use of chemical fertilisers, of HYV seeds and mechanisation of agriculture help in increasing agricultural production. But it can not be overemphasised that irrigation holds the key to agricultural development in India through its effects on the pattern and efficiency of land use. The adoption of modern inputs like HYV seeds and chemical fertilisers too is intimately related to the availability of an assured water supply.

IRRIGATION: Over the planning period sizeable investment has been undertaken in the field of irrigation both by the State government and private individuals resulting in a marked increase in net as well as gross cropped area.

The following table shows the classwise distribution of irrigated area in Western U.P. during 1976-77.

TABLE 4.1

Size-Class wise percentage of Gross Irrigated Area to Gross Cropped Area in U.P. and Western U.P. during 1976-77

Size Class (in hectares)	Percentage of irrigated area Western U.P.	U.P.
Below 1.0	52.2	43.1
1.0 - 2.0	55.9	44.3
2.0 - 4.0	57.8	45.8
4.0 - 10.0	59.5	44.2
10 & above	55.6	34.5
Total :	56.6	43.7

SOURCE: Agricultural Census in Uttar Pradesh, 1976-77, p.65.

The above table shows that percentage of gross irrigated area to gross cropped area in Western U.P. was 52 in case of marginal holdings (below 1 hectare). This percentage increased with the increase in the size of holdings and was highest (59.5) in medium holdings (4-10 hect.) and there after it showed a decline. But the percentage of gross irrigated area to gross cropped area in Uttar Pradesh was highest (45.8) in the case of Semi-medium holdings, thereafter, it declined with the increase in the size of holdings, till it reached the level of 34.5 per cent in large holdings.

A study of the sourcewise development trends in irrigation in Uttar Pradesh was conducted by O. Coutinho and T.C. Sharma. It covered the period from 1966-67 to 1980-81. The selection of the year 1966-67 is based on the presumption that a rapid increase in irrigation began with the launching of the High Yielding Variety Programme. The sources of irrigation have been divided by Agricultural census in Uttar Pradesh into four categories: tubewell and other wells, canals, tanks and other sources, e.g. streams, rivulets etc.

TABLE 4.2

Percentage Distribution of Sourcewise Irrigated Area in Western Region of U.P. during 1970-71--1976-79

Source	Percentage area	
	1970-71	1976-77
1. Canals	35.2	30.6
2. Tube-wells	42.9	54.4
3. Wells	19.3	10.4
4. Tanks	0.7	0.4
5. Other sources	1.9	4.2
	100.00	100.00

SOURCE: Agricultural Census ir Uttar Pradesh, 1970-71, p.63
Agri. Census in Uttar Pradesh, 1976-77, p.63.

In Western Uttar Pradesh Canals have been the major source of irrigation in pre-independence period. But canal irrigation has been relegated to a secondary position in recent years due to rapid expansion of tubewell irrigation. It now ranks next to tubewells. The decline in its areal importance has not been due to any disuse of canals or reduction in canal irrigated area. In fact, farmers find canal water more beneficial for crops than groundwater as it replenishes soil fertility and is cheaper costwise. It was the non-availability of canal water at critical times and in adequate quantity, two very important factors in HYV technology, which helped in the growth of tube-well irrigation[1]. Table 4.2 reveals that percentage of area in Western U.P. under canal irrigation was 35.2 in 1970-71 and it came down to 30.6 in 1976-77. Percentage area under tubewells increased from 42.9 percent in 1970-71 to 54.4 percent in 1976-77. According to Coutinho and Sharma saturation point has almost been reached in tubewell irrigation in many Western districts of Uttar Pradesh and extension of canal irrigation can alone meet the increased

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1. O. Coutinho and T.C. Sharma, 'Progress of Irrigation in Uttar Pradesh Plains: Inter-regional Contrasts', Agricultural Situation in India, Vol.XLI, No.11, Feb. 1987, p.889.

demand of water in such areas as no other method is feasible[1].

Table 4.2 clearly shows that there has also been a marked shift from traditional wells to tubewells in the case of groundwater irrigation in Western U.P. The area irrigated by wells declined from 19.3 per cent of the total irrigated area in 1970-71 to 10.4 per cent in 1976-77. This is because well irrigation is not only less efficient when compared to tubewells but even costlier since water has to be lifted from well by human or animal power.

There has also been a decline in the percentage area irrigated by tanks between 1970-71 and 1976-77 in Western U.P. But, as the above table shows the practice of irrigation through tanks has not been significant in West U.P.

Tubewell irrigation provides controllable and dependable supply of water round the year. It is the most efficient and assured means of irrigation. We have to examine to what extent this assured means of irrigation has been developed in U.P. during the period 1951-81 and how far

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1. O. Coutinho and T.C. Sharma, 'Progress of Irrigation in Uttar Pradesh Plains: Inter-regional Contrasts', Agricultural Situation in India, Vol.XLI, No.11, Feb. 1987, p.889.

farmers belonging to different classes have taken advantage of tubewell as a mode of irrigation.

Uttar Pradesh tops the list of states with regard to the number of private and public tubewells. Net area irrigated by tubewells in U.P. accounted for 47 per cent of the net area irrigated in India in 1977[1]. It shows that Uttar Pradesh holds a prominent position in the development of tubewell technology in India.

TABLE 4.3

Number of Tube-wells in U.P. During 1951-78

Year	Stock of Tube well	
	Private	Public
1951	3000	2200
1961	5000	6280
1969	120000	8946
1974	400000	12838
1977	600000	14709
1978	660000	16009

SOURCE: B.D. Dhawan, 'Trends in Tubewell Irrigation, 1951-78', Economic & Political Weekly, Dec. 1979, P. A-145.

1. B.D. Dhawan, 'Trends in Tubewell Irrigation, 1951-78', Economic & Political Weekly, Rev. of Agriculture, Dec. 1979, p.A-145.

The stock of private tubewells rose in U.P. from about 3000 in 1951 to 660,000 in 1978, most of the growth occurring during the 1960s and the 1970s. But in the case of public tubewells increase in the number of tubewells took place during 1950s at a faster rate compared to the 1960s.

The area under tubewell irrigation rose so much that tubewells became not only the principal mode of groundwater irrigation but also the single most important source of irrigation, overtaking canal irrigation which had dominated, since long, the irrigation scene in North-India in general and West U.P. in particular.[1]

The total number of tubewells in western U.P. was 235700 in 1977 out of which 83600 were electrically operated and 152100 were diesel operated.[2]

The distribution of tubewells in different regions of U.P. was not even. About 63.7 per cent of the total tubewells in the state were located in western U.P. in 1976-77.[3]

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1. B.D. Dhawan, 'Trends in Tubewell Irrigation, 1951-78', Economic & Political Weekly, Rev. of Agriculture, Dec. 1979, RA-147.

2. Agricultural Census in U.P., 1976-77, Lucknow, 1980, p.64.

3. Ibid., p.64.

TABLE 4.4

Distribution of net irrigated area by sources in U.P. (1970-71)

Size Class (in hec.)	Percentage of net area irrigated by						Net area irrigated X 100/net area sown
	Canals	Tube-weels	Wells	Tanks	Other Sources	All Sources	
Less than 0.5	28.3	32.8	27.6	5.9	5.4	100.00	46.7
0.5 - 1.0	31.9	32.7	25.2	5.4	4.8	100.00	45.6
1.0 - 2.0	33.7	33.2	24.0	4.7	4.4	100.00	44.8
2.0 - 3.0	35.0	34.4	22.7	3.9	4.0	100.00	45.1
3.0 - 4.0	36.3	36.3	20.7	3.2	3.5	100.00	45.8
4.0 - 5.0	36.5	37.8	19.4	2.9	3.4	100.00	45.5
5.0 -10.0	38.7	38.3	17.2	2.4	3.4	100.00	42.7
10.0-20.0	43.1	37.7	13.1	2.3	3.8	100.00	36.0
20.0-30.0	46.9	35.2	9.6	2.6	5.7	100.00	28.8
30.0-40.0	47.4	35.7	8.6	2.5	5.8	100.00	24.7
40.0-50.0	39.7	41.8	7.7	2.3	8.5	100.00	22.2
50.0- and above	32.6	55.4	2.9	1.9	7.2	100.00	25.4
All classes	35.1	35.1	21.7	4.0	4.1	100.00	43.9

Source: Agricultural Census in Uttar Pradesh, 1970-71, Lucknow, 1974, p.62.

Among all the sources tubewells and canals are the more efficient sources of irrigation. The irrigation by canal is low (28 per cent) in holdings of half an hectare but it went on increasing with the increase in the size of holdings and was a little less than half (47 per cent) of the total

irrigated area in the size class of 30 to 40 hectares but thereafter it sharply declined to 40 percent and 33 per cent in the holdings of 40-50 hectares and above 50 hectares respectively. Percentage of area irrigated by tubewells also remained fluctuating between 33 per cent and 38 per cent in the holdings up to 40 hectares but in holdings larger than 40 hectares the area irrigated by tubewells showed a significant increase, being as much as 55.4 per cent in case of holdings above 50 hectares. This shows that larger farmers have been reaping a greater advantage from modern irrigation technology compared to small and marginal farmers. The obvious reason for this seems to be that they have financial means to install private tubewells as well as to pay the charges on the use of canal water. Tubewell irrigation, on account of a relatively larger investment required for it, has brought into play the role of capital and finance for the first time in Indian agriculture in a big way, and it has become a major factor in increasing the income disparity between different classes of agriculturists due to its multiplier effect on the economy of a farming unit.

FERTILIZERS: The use of chemical fertiliser is one of the most important components of new agricultural technology. It was negligible in Uttar Pradesh in the pre-Green Revolution period. But the use of chemical fertilisers started picking up sharply from 1967-68 onwards, after the introduction of

high yielding variety seeds. The use of artificial fertilisers also increased due to the rapid growth of irrigation facilities.

We can have a better idea of the rate of increase in consumption of chemical fertilisers by measuring their use on per hectare of farm land. Fertiliser consumption per hectare of cropped area increased from 4.2 Kg. in 1965-66 to 47.4 Kg. in 1980-81 in U.P. In terms of per hectare of irrigated area the figure of fertiliser consumption has crossed the 100 Kg. mark. Uttar Pradesh ranks third among Indian States in per hectare consumption of chemical fertilisers.

Table 4.5

Chemical Fertilizer Consumption Per Hectare

	1965-66	1970-71	1975-76	1980-81
Per Hectare of Cropped Area (in Kg.)				
Western U.P.	6.0	22.7	27.0	58.5
Uttar Pradesh	4.2	17.7	21.1	47.4
Per Hectare of Irrigated Area (in Kg.)				
Western U.P.	14.7	45.1	50.3	93.3
Uttar Pradesh	14.1	49.1	52.9	101.2

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation, The Case of Uttar Pradesh, 1951-81, Lucknow, 1984, p.221.

The above table shows that chemical fertiliser consumption per hectare of cropped area in Western U.P. is

above the State's average. In case of irrigated area the use of fertiliser shows a smaller difference between Western U.P. and the State's overall average. Thus the variation in the level of per hectare fertiliser consumption is due to variation in the availability of irrigation facilities.

The fertiliser strategy in the sixth plan (1980-85) was oriented towards increasing the use of organic manures, both farmyard manures and urban and rural compost. The provision of alternative fuel to rural population it was argued, would help in increasing the availability of farmyard manure. The increasing use of gobar gas plants was expected to increase the availability of organic manures for the cultivators. It was poirted out that there was a great scope for the manufacture of compost from Urban waste, forest waste and other sources and this will help in reducing our dependence on chemical fertilisers and the resultant increase in the demand for water supply.

Schulter has noted that the extent and the rates of adoption of new technology are positively related to the size of land-holdings.[1] It has been found that generally large

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1. M. Schulter, 'Differential Rates of Adoption of the New Seed varieties in India: The Problem of Small Farmers', Occasional Paper No.47, Cornel University, 1971.

farmers use more fertiliser per acre than the small farmers. According to Pramit Chaudhuri this reflects not so much the inherent progressiveness of the rich farmer as his ability, under the existing system, to make a pre-emptive bid for scarce resources.[1] Again, the degree of fertiliser application that is profitable will depend on the availability of water and on the ability of a farmer to purchase the use of both the inputs at the same time.[2] Since both the inputs involve significant costs and hence financial resources, small farmers are unable to take advantage of these inputs to the extent big farmers can. This helps in improving productivity on the farms owned by richer peasants giving them advantage over smaller peasants. With an increase in their output and income they can further invest in modern inputs. This has been a significant factor in increasing the extent of income disparity between the rich and the small farmers in our region.

H.Y.V. Technology: The discovery and the widespread use of high yielding variety seeds technology in Japan and the

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1. Pramit Chaudhuri, The Indian Economy, poverty and Development, Vikas Publishing House Pvt. Ltd., New Delhi, 1978, p.138.

2. A. Parikh, 'Complementarity between Irrigation and Fertilizer in Indian Agriculture', IJAE, July-Sept.

United States was the result of rising labour costs due to scarcity of labour and availability of cheap fertilisers in these countries. The absorption of surplus labour on farms was not a major requirement confronting the agricultural scientists and policy makers of these regions as they had been employed in the rapidly expanding industrial sector.

In India there is some dichotomy between the factor endowments of the developed pockets and large farmers on the one hand and the rest of the farm economy on the other . We have to examine whether HYV technology suits the factor endowment of western U.P. and to what extent has it helped in solving the problem of unemployment in the rural sector.

In India, high yielding variety seeds have been adopted on a large scale in regions like Punjab and West U.P. where land-worker ratios and wages are high and which have a better resource position in financial terms. Irrigation and cropping intensities were at a higher level in these regions even before the introduction of HYVs: but these were expanded further with the use of HYVs[1].

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1. C.H. Hanumantha Rao, 'Factor Endowments, Technology and Farm Employment', Economic and Political Weekly, 25 Sept., 1976, RA-118.

For studying the impact of modern technology on employment agricultural technology can be divided into (1) Water-seed-fertiliser technology (HYV technology) and (11) agro-mechanical technology which is often equated, in the literature on the subject, with mechanisation, especially tractorisation.

High Yielding Variety Technology and Rural Employment:

The adoption of HYV technology can increase labour demand in many ways. Irrigation can facilitate a shift in the cropping pattern towards more labour intensive crops and to fertiliser responsive new varieties, which also require more water. This, in turn, increases the work associated with improved agricultural practices like transplanting and application of inputs like water, fertilisers and pesticides. All these, as well as weeding, necessitated by the increased use of fertiliser requires more labour. Moreover, since new seeds result in yields higher than those achieved by sowing traditional seeds, more labour is required for harvesting and processing the crop. Shorter maturity period of crops grown with high yielding variety seeds permits the planting of two or even three crop a year, which increases the overall use of labour per unit of cultivated area.

In Western U.P. the double cropped area increased from 13.9 lakh hectares during 1953-56 to 24.6 lakh hectares

during 1975-78. This shows an increase, in the double cropped area, of 2.59 per cent per annum during the period. In Uttar Pradesh as a whole double cropped area increased from 39.7 lakh hectares during 1953-56 to 58.7 lakh hectares during 1975-78, which shows an increase of 1.81 per cent per annum[1]. This shows that the double cropped area increased at a faster rate in Western U.P. than it did in U.P. as a whole. This seems to be the consequence of the use of HYV seeds and better irrigation facilities in the region of Western U.P.

High yielding variety technology may help to increase the use of hired labour in Agriculture for the following reasons. First when double cropping is introduced even the small holder may find it difficult to cope with harvesting with the help of family labour alone, and secondly since the new seeds programme have been adopted especially by farmers, with large land holdings, in whose case the supply of family labour is not adequate in relation to land, the demand for hired labour may increase. The increase in incomes of cultivator households due to the adoption of HYV technology may also have a possible negative effect on the supply of

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1. Ajit Kumar Singh, The Dynamics of Rural Transformation 1951-81, Lucknow, 1984, p.63.

family labour as woman and child labour might no longer be employed[1].

A number of studies have been undertaken to measure the impact of HYV technology on the employment of agricultural labourers. Ian R Wills studies a single development block in Western U.P. The locality chosen was Bisauli block in Badaun district. In 1967-68, the items of new technology available to the farmers of this block as well as to the farmers of Western U.P. were new cereal varieties, new varieties of mustard and potatoes, modern pumping equipment and chemical fertilisers. It is assumed by Wills that these inputs will be generally adopted by farmers by 1972-73. Wills showed by his study that the annual crop labour requirements predicted for the block in 1972-73 were probably 30-50 per cent higher than actual crop labour requirements in 1967-68.[2]

J.S. Garg has selected Kalyanpur block of Kanpur to study the impact of improved technology on labour employment.

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1. Rakesh Basant, 'Agricultural Technology and Employment in India', Economic and Political Weekly, Vol.22, No.31, August 1, 1987, p.1299.

2. Ian R. Wills, 'Green Revolution and Agricultural Employment and Incomes in Western U.P.', Economic and Political Weekly, 6 March 1971, P.A-6.

According to him the introduction of HYVs has not only raised the agricultural production per unit of area but has also reduced rural unemployment.

Table 4.6

Percentage Area under High-Yielding varieties to Total Cropped Area and Utilisation of Human Labour Days per Hectare

(Kalyanpur Block)

Year	Percentage area under HYVs to total cropped area	Utilisation of human labour days per hectare
1966-67	10.69	92.89
1967-68	14.43	110.17
1968-69	20.09	119.71
1969-70	21.54	141.51
1970-71	34.81	145.76

SOURCE: J.S. Garg and Others, 'Impact of Modern Technology on Rural Unemployment', Indian Journal of Agricultural Economics, Vol. 27, Oct.-Dec. 1972, P. 207.

The above table shows that the utilisation of human labour increased by about 57% in 1970-71 over 1966-67. The table also shows that utilisation of labour increases with increase in the area under the high yielding varieties.

Table 4.7

Utilisation of Human Labour Days Per Hectare for High-Yielding and Local Varieties of Maize, Paddy and Wheat (1970-71)

(Kalyanpur block of Kanpur District)

Size group (hectares)	Maize		Paddy		Wheat	
	Hybrid	Local	High Yielding	Local	High Yielding	Local
0-2	101.66	83.37	98.00	88.40	107.20	96.80
2-4	-	86.44	105.96	94.45	113.59	97.99
4-6	103.06	88.33	107.18	92.74	116.82	101.59
6 & above	101.94	85.29	105.18	89.98	113.99	97.99
Average	102.70 (19.47)*	85.96	105.16 (15.81)	90.80	113.53 (14.92)	98.79

* Figure in brackets show the increase in percentage of employment when local (traditional) varieties were replaced by H.Y. varieties.

Source: J.S. Garg & Others, 'Impact of Modern Technology on Rural Unemployment' Indian Journal of Agricultural Economics, Vol.27, Oct-Dec. 1972, p.209.

The above table shows the utilization of human labour days per hectare for the high yielding and local varieties of wheat, paddy and maize for the period of 1970-71. The utilisation of human labour days for the HYVs of wheat, paddy and maize was 102.70, 105.16 & 113.53 per hectare. The utilisation of human labour days for the corresponding local varieties was 85.96, 90.80 & 98.79 days only. It shows that the HYVs of paddy, maize and wheat enhanced the employment

opportunities by 19.47 per cent, 15.81 per cent and 14.92 per cent respectively over the corresponding local varieties. Thus the use of HYVs had led to an increase in rural employment.

MECHANISATION: Modernisation of agriculture also depends upon the degree of mechanisation of agricultural operations. In the Indian context a high degree of agricultural mechanisation is not considered to be desirable in view of its adverse impact on demand for human labour. Very few studies have been conducted on the impact of agricultural mechanisation on the employment of agricultural labourers in U.P., especially in Western U.P. Joshi and others[1] show the negative effect of mechanisation on the employment of agricultural labourers both in eastern and western U.P. In an another study of Jaunpur district (Eastern U.P.) D. Singh and others[2] showed that use of human labour in interculture, mechanised harvesting and threshing had declined considerably over the period 1967-68 to 1979-80. However, agricultural mechanisation helps the cultivators to the extent it reduces

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1. P.K. Joshi, D.K. Bhal and D. Jha, 'Direct Employment Effect of Technical Change in Uttar Pradesh Agriculture', Indian Journal of Agricultural Economics, Vol.XXXVI, No.4, Conference number, 1981.

2. D.Singh, V.K. Singh and R.K. Singh, 'Changing Pattern of Labour Absorption on Agricultural Farms in Eastern Uttar Pradesh' (A Case Study), Indian Journal of Agricultural Economics, Vol.36, No.4, Conference number, 1981.

drudgery and the arduous nature of human labour on land. It also displaces draft power.

TABLE 4.8

Regional Distribution of Selected Agricultural Machinery and Implements, 1978 (Per cent)

Item	U.P. (100)	Western Region (34.7)	Central Region (17.6)	Eastern Region (33.1)	Hill Region (4.0)	Bundel-khand (10.5)
1. Plough						
a. Wooden	100	23.9	19.8	45.0	6.0	5.3
b. Iron	100	43.0	19.9	32.4	2.5	2.0
2. Improved Harrow and cultivator	100	26.6	17.3	5.6	4.0	46.4
3. Improved sowing machines	100	31.5	3.2	9.2	1.0	56.6
4. Improved Threshing Machines	100	49.2	13.6	35.0	1.7	5.6
5. Chopper machines	100	41.2	17.4	36.7	1.1	3.3
6. Germ Killer and sprayers	100	31.5	18.3	26.4	2.2	0.1
7. Carts	100	45.1	27.0	14.0	1.5	12.3
8. Persian wheels	100	72.6	7.2	7.0	0.2	13.1
9. Pumping sets						
a. Diesel	100	50.6	19.6	26.2	1.4	2.1
b. Electric	100	55.8	9.2	34.1	4.6	0.4
10. Tractors	100	67.1	10.6	18.5	5.6	6.0

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation, The case of Uttar Pradesh, 1951-81, Lucknow, 1984, p.230.

The above table shows that the pace of agricultural mechanisation has not been uniform over different parts of uttar Pradesh. There is heavy concentration of agricultural machinery and implements in the Western U.P. The region covers around 35 per cent of the total net sown area of U.P. but has 67.1 per cent of the total number of tractors, 55.8 per cent of the total electric pump sets, 50.6 per cent of the total diesel pump sets and 49.2 per cent of the total threshers in U.P. This indicates that the pace of mechanisation is much greater compared to the other regions of Uttar Pradesh. Thus the tendency of displacement of human labour in agricultural operations such as ploughing, threshing and irrigation is greater in Western U.P.

IMPACT OF MECHANISATION ON EMPLOYMENT OF LABOUR:

Mechanisation can effect the use of total and hired labour depending upon the operations mechanised and also whether the use of family labour increases because of reduced drudgery of farm work or decreases because of leisure preference due to improved increase and standard of living of the concerned households.

In terms of individual operations, mechanisation tended to reduce labour demand especially for land preparation activities and threshing. Joshi and others[1] have made an

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1. P.K. Joshi, D.K. Bhal and D. Jha, 'Direct Employment Effect of Technical Change in Uttar Pradesh Agriculture', Indian Journal of Agricultural Economics, Vol.36, No.4, Oct-Dec. 1981.

attempt to decompose the direct effect of technological breakthrough on the total change in labour employment both in east and west U.P. during 1966-77 and 1977-78. Their findings are reproduced in the following table.

TABLE 4.9

Decomposition of the Changes in Total Labour input in Wheat and Rice Crops in Uttar Pradesh (1966-67 to 1977-78)

(Man hours per hectare)

Effect	Wheat			Rice		
	East	West	U.P.	East	West	U.P.
1. Irrigation (additional area irrigated)	16.93	22.00	25.70	1.50	4.85	3.29
2. Irrigation Technology (Switch to pumpsets)	-11.69	-3.99	-6.38	-0.70	-1.80	-1.32
3. Seed Variety	35.46	19.86	22.12	1.66	6.70	2.56
4. Tractor ploughing	-12.41	-44.36	-19.09	-15.65	-65.23	-37.27
5. Mechanical Threshing	-13.22	-50.69	-0.10	-0.74	-0.74	-0.41
6. Chemical Weed control	-6.23	-15.44	-6.73	-0.39	-1.44	-6.86
7. (A) Irrigation varietal interaction	7.41	6.51	7.64	0.54	1.21	0.54
(B) Other interactions	-5.95	-14.38	-0.29	-0.23	-0.26	-0.30
Change in total labour input	10.30	-89.49	-21.39	-13.38	-55.27	-39.77
Linear annual growth rate of employment (per cent)	0.17	-1.66	-0.24	-0.18	-1.09	-0.67

Source: P.K. Joshi, D.K. Bhal and D. Jha, 'Direct Employment Effect of Technical Change in Uttar Pradesh Agriculture', Indian Journal of Agricultural Economics, Vol.36, No.4, Oct-Dec. 1981.

Table No.4.9 shows that the direct effect of the new technology on employment per hectare has been negative both

in East and West U.P. as well as in the whole state, with the exception of wheat crop in East U.P. The displacement of labour use was significantly higher in Western U.P. The use of total labour input declined by 89.49 and 55.27 man hours per hectare for wheat and rice cultivation respectively in Western U.P. during 1966-67 -- 1977-78. While the interaction between the H.Y. Varieties and irrigation was found to exercise a positive influence on labour use, it was not strong enough to counterbalance the negative employment effect of tractor ploughing, mechanised threshing and mechanised irrigation. The increasing use of mechanical technology i.e. tractor ploughing, mechanical threshing, tractor driven pumps, etc. seem to be the major labour displacing force.

Table No. 4.9 shows a negative overall effect of the technological change on employment. Labour use decreased by 89.49 and 55.27 man hours per hectare for wheat and rice respectively in West U.P. during the period 1966-67 to 1977-78.

According to Bardhan[1] a reduction in labour time requirements of family and permanent labour may not necessarily mean a reduction in the number of workers; the

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1. K. Bardhan, 'Rural Employment, Wages and Labour Market in India: A Survey of Research', Economic and Political Weekly, Vol.12, Nos.26, 27, 28.

former may continue to subsist on the farm if alternative full time employment is not available (or in case of family labour of richer peasants if their leisure time increases) and the latter, even if underutilised during some part of the year may be retained to reduce the risk of labour shortage during the peak periods. A similar decrease in casual labour time, however, would usually mean a displacement of labourers, affecting directly their earnings.

The above table gives information only about the reduction in labour time requirements during 1966-67 to 1977-78. The decrease in the actual number of agricultural labourers as a result of mechanisation should have been worked out; but this has not been done. Again information about the decline in the number of hired and family labour is not given in the table.

CLASSWISE DISTRIBUTION OF GAINS OF MODERN TECHNOLOGY

According to P.C. Joshi the penetration of new technology into the countryside has worsened the relative position of the rural poor as it has resulted in widening the disparity between large farmers on the one hand and small farmers and agricultural labourers on the other.[1]

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1. P.C. Joshi, Institutional Aspects of Agricultural Development, Allied Publishers Pvt. Ltd., New Delhi, 1987, p.239.

Since the socio-political power structure in the countryside in India is biased in favour of the big farmers, they have a greater access to government bodies and other institutions. The large cash requirements for purchase of modern inputs, and the risk implicit in the adoption of new practices place the larger farmers at an advantage over smaller holders, and thus further accentuates the degree of disparity between different classes within a region.[1] Again the biochemical technology, i.e. the package of HYV seeds, water and fertilisers, is size-neutral in the sense that it can be used irrespective of the size of the farm but according to Hanumantha Rao even this technology is not resource neutral.[2] Rich farmers have greater financial resources so they are able to purchase the modern inputs, but small and marginal farmers, due to lack of financial resources, are not able to take advantage of modern inputs.

Ian R. Wills, in his study of the Bisauli block of Badaun district in Western U.P., predicted the impact of new technology on the income of large,medium, small farmers and

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1. Susanta K. Ray, Intensification of Agriculture, Hindustan Publishing Corporation (India), 1985, p.75.

2. C.H. Hanumantha Rao, Technological Change and Distribution of Gains in Indian Agriculture, Macmillan, New Delhi, 1975, p.44.

agricultural labourers. In 1967-68 the item of new technology available to farmers in Western U.P. were new cereal varieties, new varieties of mustard and potatoes modern pumping equipment and chemical fertilisers. Wills assumed that these inputs would be generally adopted by farmers of Bisauli block of 1972-73.

The following table gives the gross and net incomes per acre from crop production obtained by large, medium and small farmers in 1972-73.

TABLE 4.10

Gross and Net Crop Returns Per Acre Predicted for Three Sizes of Farms in Bisauli Block in 1972-73

(in Rs.)

	Type of Farms		
	Large	Medium	Small
1. Gross Crop returns	709	761	861
2. Returns net of harvesting costs	525	626	833
3. Returns net of harvesting costs & operating capital costs	394	456	641
4. Returns from Water sales	75	-	-
5. Overall Net Returns	469	456	641

Source: Ian R. Wills, 'Green Revolution and Agricultural Employment and Incomes in Western U.P.', Economic and Political Weekly, 6 March 1971, p.A-6.

The above table shows the net crop returns per acre predicted for large, medium and small farms in 1972-73. Expected overall net returns per acre from crop production for small farms is greater than net returns for large and medium farms. The income advantage predicted for small farms is conditional on the assumption that crucial inputs such as fertilisers are evenly distributed in all the categories of farms. This is, obviously, not a realistic assumption in the Indian circumstances.

Wills also predicted that the widespread adoption of the new technology, by increasing the demand for agricultural labour, will increase the real wages of agricultural labourers who own no land or only tiny plots of land. But their incomes are likely to fall relative to farmer's incomes. Again, he assumes that the higher wages at sowing and harvest times may prompt the owners of large holdings to invest in mechanical equipment which can substantially replace human labour, such as tractors, power tillers and power-driven threshers. The widespread adoption of such equipment by the larger farmers, if it occurs would have an adverse effect on the incomes of agricultural labourers because these new equipments replace human labour. The studies by Ian R. Wills envisages that widespread adoption of new technology over the next few years will reduce the relative disparity between the incomes of large and small

landholders in irrigated area if the chemical fertilisers are distributed to both the categories of farmers equally, according the area farmed. Will's studies are based on the assumption that inputs are equally distributed among large and small farms. But, as has already been pointed out, since in reality the large farms have a better command over financial resources and inputs his assumption is not realistic and one should expect the adoption of modern technology to be more extensive on the large farms.

Will's view that the use of mechanical equipment will reduce the demand for labour and this will affect the income of agricultural labourers adversely, is based on a logical assumption.

Again Raj Vir Singh's study of the Jaunpur district of eastern Uttar Pradesh[1] shows the impact of new technology on the income of different categories of farms, Jaunpur was found to be a most progressive region in the use of modern technology in eastern U.P. The study divided the farms into small, medium and large farms. Tractors were available only on large farms and none of the small and medium farms owned

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1. Raj Vir Singh & L.R. Singh, 'Mechanisation and Employment Degeneration on Farms in Eastern Uttar Pradesh', Indian Journal of Industrial Relations, Vol.16, No.1, July 1980, New Delhi.

this mechanical device. As against tractors, tubewells were owned by all the groups of farms, but their number showed an increase with the size of farm. The proportion of these inputs to the total inputs was found to be greater on large farms compared to small and medium farms.

TABLE 4.11

Gross Income, Total Cost and Net Income Per Acre (Rs.) in 1971-72

Category of Farm	Gross Income	Total Cost	Net Income
Small	850.71	726.45	124.26
Medium	820.95	539.39	281.56
Large	898.06	511.04	387.62
Overall	866.92	561.76	305.16

Source: Raj Vir Singh & L.R. Singh, 'Mechanisation and Employment Degeneration on Farms in Eastern Uttar Pradesh', Indian Journal of Industrial Relations, Vol.16, No.1, July 1980, New Delhi, p.118.

Net income per acre shows an increasing trend with the increasing size of the farm. The increased use of mechanical power, assured irrigation through tubewells, and greater adoption of improved farm technology on large farms was reflected in increased net income and reduced cost per acre.

We can not reach any firm conclusion about the impact of new technology on the income of different categories of farms on the basis of the study of only one or two districts. Unfortunately no other income distribution studies exist of other districts of Uttar Pradesh.

G.S. Bhalla undertook an empirical study of the impact of Green Revolution technology on income distribution in Haryana. The study is based on an analysis of schedules collected from 723 cultivating households selected from 100 villages all over Haryana. On the basis of the data collected G.S. Bhalla discovered that the Green Revolution has tended to reduce rather than aggravate disparities amongst the users of modern technology. According to Bhalla the new technology seemed to be not only neutral to Scale but slightly more favourable to the smaller farmers. This is because the smaller farmers are able to record higher output per acre (due to intensive use of their land) and are also able to save on hired labour input which turns out to be a major cost for the bigger cultivators[1].

Bhalla's study does not support the hypothesis that the use of modern technology tends to aggravate inequalities. For

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1. G.S. Bhalla, 'Transfer of Technology and Agricultural Development in India', Economic and Political Weekly, Review of Agriculture, Dec. 1979, P.A.-139.

the landless labour also, the Haryana study pointed out that in the Green Revolution region they were able to record higher earnings than in the comparatively backward regions of Haryana.

But, according to G.S. Bhalla, this does not mean that income inequalities have ceased to exist and that poverty and destitution in the rural sector have been eliminated. In fact there are still large income inequalities in the countryside. The basic reason for their existence is that the main productive asset, land, is very unevenly distributed. Rapid growth through the application of modern technology tends to benefit all sections almost in proportion to their command over productive resources. It benefits even landless labourers as the demand for hired labour also increases pushing up wages.[1]

Haryana is the region of very high growth. Since Western U.P. is also a region of high growth we can say, with some probability, that the above observations may have some relevance to Western U.P. But due to very few empirical studies of the impact of new technology on income distribution in Western U.P. we can not reach any final conclusion.

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1. G.S. Bhalla, 'Transfer of Technology and Agricultural Development in India', Economic and Political Weekly, Review of Agriculture, Dec. 1979.

CHAPTER V

AGRICULTURAL LABOUR SINCE EARLY SIXTIES

The problems of the agricultural workers demand the attention of the country today as the foremost question on the agrarian front. A vast section of the rural population lives mainly by wage labour. They constitute the economically worst exploited and socially most oppressed section of the agrarian population. In addition to economic exploitation, they are socially discriminated against because a big section of agricultural workers belong to the Scheduled Castes and Scheduled tribes.

For the purpose of this study the term agricultural labour would include both landless labour and the share-cropper. The term agricultural labourer thus denotes the agricultural labourer employed for wages at fixed rates or as a share of agricultural product and receiving a major share of his income through this means. Agricultural labourers are sub-divided in official surveys into "agricultural workers without land" and "agricultural workers with land", the former being utterly landless while the latter derive a minor part of their income from the small plots of land they might hold.

Baljit Singh and Shridhar Misra have pointed out that during the early 1960s nearly all the non-tenure holder

cultivators and asamis were agricultural labourers who had under their cultivation petty holdings.[1] Very often, they had no legal right recorded as such to the holding that they cultivated.

Leasing and Tenancy:

Under the U.P. Zamindari Abolition and Land Reforms Act, 1951 Sub-letting of land was declared illegal except for some categories like widows and army personnel. However, the practice is quite widespread under the garb of share-cropping. Most of the land is leased-in by landless labourers and small cultivators in U.P.

Of the various terms on which land is leased out like fixed money payment, fixed produce, share of produce, usufructuary mortgage, etc. the most commonly prevalent practice is that of payment in fixed amount of money.[2] Under the usufructuary mortgage, the ownership of property remains with the mortgagor but the possession of land continues to remain with the mortgagee and the mortgage is terminated as soon as the full amount of loan is realised.

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1. Baljit Singh and Shridhar Misra, A Study of Land Reforms in Uttar Pradesh, p.142.
2. Ajit Kumar Singh, The Dynamics of Rural Transformation, Lucknow, 1984, p.292.

It has been shown in Chapter-II (Table:2.6) that between 1961-62 - 1971-72 the practice of leasing out land has increased in U.P. P.C. Joshi has pointed out that increase in tenancy is due to the increasing importance of commercial tenancy based on the rich and middle strata of the peasantry who are part owner and part-tenants and posses resources and enterprise for dynamic agriculture. The increasing importance of Commercial tenancy accentuates class differentiation among the tenants and shifts the distribution of land in favour of the larger rather than the smaller cultivators.

In the Agricultural census in Uttar Pradesh, 1970-71 for the first time district-wise data of leased in area became available. The total holding area was classified in four categories according to tenures viz. (1) owned and self-operated (2) leased-in from Bhumidhars and Sirdars (3) leased-in from Government or Gaon Sabha and (4) Unauthorised Occupation.[1]

The following table (Table:5.1) has been derived from the statistics given by the agricultural Census in Uttar

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1. Agricultural Census in Uttar Pradesh, 1970-71, Lucknow, 1974, p.57.

Pradesh, 1970-71. It gives a clear picture of districtwise distribution of area leased-in, in the region of Western Uttar Pradesh.

TABLE 5.1

Districtwise Area (in hectares) Leased-in in the Districts of Meerut and Agra Division

District	Total Cultivated area (hectare)	Area leased in	
		From Sirdars or Bhumidhars	From Gaon Sabha or Govt.
Dehra-Dun	61105	9 (0.014)	56 (0.09)
Saharanpur	380126	467 (0.12)	1338 (0.35)
Muzaffarnagar	339245	128 (0.03)	587 (0.17)
Meerut	470516	637 (0.10)	1090 (0.23)
Bulandshahr	386951	391 (0.05)	1026 (0.26)
Aligarh	404299	234 (0.09)	602 (0.14)
Agra	359998	327 (0.03)	771 (0.21)
Mathura	322354	121 (0.13)	835 (0.25)
Mainpuri	299628	164 (0.05)	406 (0.13)
Etah	319616	235 (0.07)	797 (0.24)

Note: Figures in brackets are percentage figures.

Source: Agricultural Census in Uttar Pradesh, 1970-71, Board of Revenue, U.P., Lucknow, 1974.

Though the Zamindari Abolition Act, 1951, placed curbs on sub-letting of land except in certain special cases, in actual practice sub-letting and share-cropping could not be reduced to any significant extent. Although, the census data released has shown the extent of this hidden tenancy yet it can not be claimed that they reflect the complete picture, because, inspite of best efforts, the parties concerned were very reluctant to reveal full facts to the field workers at the time of canvassing the Schedules, as has been admitted by the Agricultural census in Uttar Pradesh, 1970-71.[1]

In the Agricultural Census of 1976-77 districtwise data of area leased-in is not available. Only Regionwise figures are given in this census, hence the two censuses fail to provide the basis for measuring districtwise changes in sub-letting in Western Uttar Pradesh, or in the region as such.

Area leased-in has been defined by the census as all land taken on lease from others without any permanent right of possession, land leased-in may be taken on different terms and conditions, viz. (1) for fixed amount of money (2) for

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1. Agricultural Census in Uttar Pradesh, 1976-77, Board of Revenue, U.P., Lucknow, p.25.

TABLE 5.2

Regionwise Percentage Distribution of Area According to type of Tenure in 1976-79 in U.P.

Region	Wholly owned and self operated	Partly owned and partly leased-in	Wholly leased-in	Otherwise operated area	Total
Western U.P.	98.7	0.3	0.2	0.8	100.00
Eastern U.P.	98.6	0.3	0.1	1.0	100.00
Bundelkhand	95.9	1.6	0.5	2.0	100.00
Hill	95.5	1.0	0.1	3.4	100.00
Total	98.2	0.5	0.2	1.1	100.00

Source: Agricultural Census in Uttar Pradesh, 1976-77, Board of Revenue, U.P., Lucknow, p.25.

fixed quantity of produce (3) for share of produce (4) under usufructuary mortgage and (5) under other terms.[1] Land leased-in under other terms generally includes land leased in for which lease is partly paid in cash and partly in kind. This category also includes the land given on the condition of rendering services either to the village community or to

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1. Agricultural Census in Uttar Pradesh, 1976-77, p.52.

the Government. However, since in 1970-71, the information regarding area under different types of tenure was collected on a different pattern from that of 1976-77 census it is not possible to give a comparative picture of the changes that might have occurred since the first agricultural census in 1970-71.[1] While in 1976-77 tenures were divided into four categories (1) wholly owned and self-operated (2) partly owned and partly leased in (3) wholly leased in (4) otherwise operated, in 1970-71 tenures had been divided into five categories (1) Wholly owned and self operated (2) Land leased-in from Sirdar or Bhumidhar (3) Land leased-in from Gaon Sabha or govt. (4) Land occupied in an unauthorised way (5) Holding operated under more than one category.

Living Conditions of Agricultural Labourers:

We can have an idea of the living conditions of agricultural labourers by studying their wage-patterns, employment position and the burden of debt they carry. Wages of agricultural labourers are largely determined by factors such as the level of agricultural development, size of agricultural and non-agricultural labour force, and the

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1. Agricultural Census in Uttar Pradesh, 1976-77, p.52.

extent of organisation among the landless agricultural labourers.Punjab, which has experienced the fastest development of its agricultural sector, has high money and real wages.[1] The proportion of agricultural labourers to total rural workers in Punjab is found to be lower (25 per cent) than that in several other states where the wage rates have either registered meagre increases or have even declined. Punjab's non-agricultural sector, too, is larger and provides employment opportunities to a large number of people, thus reducing the pressure of labour supply on cultivated land. In Kerala the rise in wages of agricultural labourers is due to effective unionisation of agricultural labourers and the pro-labour attitude of the State.[2]

WAGES:

It is a complex task to fix minimum wage for agricultural workers because they are employed in different operations; also, at times, payment of wages is made partly or wholly in kind. But in view of low wages in agriculture and a need to fix minimum wage for agricultural workers, a measure for the direct benefit of agricultural labourers was

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1. Report of the National Commission on Agriculture, Part XV, Government of India, Ministry of Agriculture and Irrigation, New Delhi, 1976, p.243.

2. Ibid., p.244.

provided in the Second Schedule to the minimum Wage Act of 1948. Minimum Wages, by this Act, were to be fixed by the State Government within three years of the date of commencement of the Act for agricultural workers. And the rates so fixed were to be reviewed periodically, at intervals not exceeding five years.[1]

In U.P. minimum wages were fixed for the first time in 1954 i.e., nearly six years after the passage of the minimum wages Act. And until 1961 there was no effort at revision.[2] The time lag exceeded the suggested period of three to five years. The subsequent years of notification of revision were 1966 and 1972.

The Uttar Pradesh Government, in view of the above Act, fixed the minimum rates of wages for employment in all farms and cultivation in the State in 1954 as follows:

Adult : Re. 1.00 per day or Rs. 26.00 per month.[3]

Child : (person below 18 years of age): Re. 0.62 paise per day or Rs. 16.25 per month.[4]

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1. R.C. Saxena, Agricultural Labour, Wages and Living Conditions in Meerut, p.170.
2. G. Parthasarthy, and Dasaradha Rama Rao, 'Minimum Wages Legislation for Agricultural Labour', EPW, Review of Agriculture, September 1975, p.A-81.
3. R.C. Saxena, Agricultural Labour, p.170.
4. Ibid., p.170.

The prevailing Minimum Rates of wages under the Minimum Wages Act, 1948, as on 31st December, 1965, were Re. 1.00 to 1.50 per day. In May 1966 the State Government proposed to increase the minimum wage rates of agricultural workers in U.P. by fixing the following rates.[1]

For eastern districts - Rs. 39 a month on farms less than 20 acres and Rs. 42.12 a month or Rs.1.68 a day on farms of over 20 acres.[2]

For Western districts - Rs. 43.68 a month or Rs. 1.68 a day on farms of less than 20 acres and Rs. 46.80 a month or Rs. 1.80 a day on farms of over 20 acres.[3]

In 1973 the minimum wage in U.P. for casual workers in agricultural employment was fixed as Rs. 3.00 to Rs. 4.00 per day. Different minimum wages were fixed for farms operating less than 20 acres and those operating more than 20 acres; they were lower for the former than for the latter. Minimum wages fixed per annum for attached workers were Rs.936 to Rs. 1170 on farms below 20 acres, and Rs.998 to

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1. Op.cit., p.171.
2. Op.cit., p.171.
3. Op.cit., p.171.

Rs. 1648 on farms above 20 acres.[1]

There is a direct relationship between the extent of trade union organisation among labourers and their wages. For the first time, during the course of Second Rural Labour Enquiry, 1956-57, data on extent of trade unionism and awareness among the landless agricultural labourers of the current minimum wages fixed under the Act were collected. At all India level, among agricultural labourers belonging to agricultural labour households (households deriving major part of earnings by the members pursuing agricultural labour), only one per cent were member of Trade Unions and two per cent of them were aware of the minimum wages fixed under the Act.[2]

The following figures have been compiled by R.C. Sexena from the Directorate of Economics and Statistics, Uttar Pradesh Government. The following table gives an idea of the annual daily average wages of agricultural labourers between 1959-60 to 1965 in Western U.P. as well as in the State as a whole.

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1. G. Parthasarthy and Dasaradha Rama Rao, 'Minimum Wages Legislation for Agricultural Labour', EPW, Review of Agriculture, September 1975, p.A-87.

2. Rural Labour Enquiry, 1974-75, Final Report on Wages and Earnings of Rural Labour Households, Labour Bureau, p.100.

Table 5.4

Annual Daily Average Wage of Agricultural Labour Based on Agricultural Year (July to June) in Rupees

Year	Western Uttar Pradesh	Whole of U.P.
1959-60	1.48	1.02
1960-61	1.54	1.02
1961-62	1.60	1.05
1962-63	1.65	1.10
1963-64	1.66	1.13
January 1965	1.89	1.31
February 1965	1.90	1.31

Source: R.C. Saxena, Agricultural Labour, Wages and Living Conditions in Meerut, p.169.

It may be observed that the wage rates in Western U.P. were not lower than the minimum wage rates fixed by the State Government. A survey conducted by R.C. Saxena in Meerut District during 1964-65 showed that this had not been the direct outcome of the fixation of wage rates by the government as not even a single agricultural labourer was aware of the fixation of minimum wages for them by the government.[1]

1. R.C. Saxena, Agricultural Labour, p.171.

It is to be noted that though the wage rates were somewhat higher than the minimum wage rates fixed by the government, they did not have any relationship with the cost of living index. The retail prices had considerably increased. The working class consumer index (1949 = 100) went up from 159 in March 1965 to 173 in November 1965. Showing that the rise in the consumer price Index during the preceding year (12 months ending November 1964) was as much as by 18.1 per cent.[1] The increase in the wage rates was far below the rate of increase of working class consumer price index.

Data compiled by Rohini Nayyar from Quarterly Bulletins of Statistics for the year 1955-56 to 1973-74 show that wages for agricultural labourers in Western U.P., were not less than minimum wages fixed by the Government. But between 1959-60 and 1973-74 while money wages increased by 8.5 per cent per annum, real wages increased by only 1.2 per cent. It could be concluded that the fast rising consumer price index for agricultural labourers made minimum wages, which were infrequently revised, less meaningful.[2]

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1. Op.cit., p.171.

2. Rohini Nayyar, "Wages of Agricultural Labourers in Uttar Pradesh", EPW, Vol.II, Nov.6, 1976, p.1771.

In Uttar Pradesh equal minimum wages for men and women were fixed.[1] Also uniform minimum wages for different operations such as irrigation, sowing, weeding, harrowing and threshing etc. were fixed in the province.[2]

Data for wages compiled by Nayyar, show the disparity of wages between Eastern and Western U.P. Both money and real wages were higher in Western U.P. than in Eastern U.P. for the period 1955-56 to 1973-74. Again, data compiled by Sudha Pai from Season and Crop Reports, U.P. for the period 1980-81 show disparity of wage rates between Eastern and Western U.P. The data are given below:

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1. G. Parthasarthy and Dasaradha Ram Rao, 'Minimum Wages Legislation for Agricultural Labour', EPW, Review of Agriculture, Sept. 1975, p.A-87.

2. Ibid., p.A-87.

TABLE 5.5

Wages of Agricultural Labourers in Uttar Pradesh

(in Rupees)

Year	West U.P.		Central U.P.		East U.P.	
	Money wage rates	Real wage rates	Money wage rates	Real wage rates	Money wage rates	Real wage rates
1955-56	1.19	-	0.88	-	0.58	-
1956-57	1.31	-	1.05	-	0.78	-
1957-58	1.28	1.28	1.02	1.02	0.72	0.72
1958-59	1.51	NA	1.09	NA	0.73	NA
1959-60	1.46	1.32	1.12	1.03	0.70	0.68
1960-61	1.54	1.34	1.33	1.17	0.69	0.67
1961-62	1.57	1.34	1.14	1.04	0.66	0.63
1962-63	1.60	1.34	1.18	1.04	0.75	0.71
1963-64	1.62	1.19	1.22	0.90	0.78	0.63
1964-65	2.17	1.22	1.47	0.81	1.19	0.67
1965-66	2.26	1.27	1.58	0.84	1.41	0.75
1966-67	2.75	1.20	1.87	0.76	1.80	0.77
1967-68	3.31	1.28	2.25	0.84	2.05	0.81
1968-69	3.26	1.51	2.19	1.03	1.92	0.97
1969-70	3.37	1.48	2.46	1.06	1.97	0.91
1970-71	3.47	1.62	2.40	1.11	1.96	0.92
1972-73	4.02	1.47	2.73	0.98	2.30	0.88
1973-74	4.60	1.31	3.12	0.86	2.85	0.82

Note: Data for 1971-72 are not available.

Source: Rohini Nayyar, 'Wages of Agricultural Labourers in Uttar Pradesh', Economic and Political Weekly, Vol.II, November 6, 1976, p.1771.

TABLE 5.6

Daily Wages of Agricultural Labourers in June 1981 in U.P.

Type of Work	Western U.P. (Rs.)	Eastern U.P. (Rs.)	U.P. (Rs.)
Ploughing and sowing	8.54	5.10	7.86
Watering & Weeding	7.67	NA	7.67
Harvesting	15.00	6.53	9.51
Other Agricultural Activities	8.12	NA	6.86

Source: Sudha Pai, Changing Agrarian Relations in U.P., p. 174.

The above table shows that the economic condition of agricultural labourers of Western U.P. is better than that of agricultural labourers of Eastern U.P.

Burden of debt on Landless Labourers:

The problem of indebtedness among landless labourers is an age-old problem. Indebtedness is basically due to lack of employment opportunities and seasonality of employment in rural areas. Indebtedness still persists despite several measures initiated by the government during the post-Independence period to ameliorate the conditions of weaker sections.[1]

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1. Rural Labour Enquiry, 1977-78, Final Report on Indebtedness among Rural Labour Household, Labour Bureau, p.61.

TABLE 5.7

Trends in Indebtedness of Rural Agricultural Labour Households in Uttar Pradesh

Item	1950-51	1956-57	1964-65	1974-75
Percentage of indebted households to total households	21.9	71.8	71.5	69.0
Average debt per indebted household (Rs)	32.0	197.0	280.0	698.0
(a) For consumption purposes (Rs.)	28.0 (87.5)	54.0 (27.4)	135.0 (48.0)	314.0 (45.0)
(b) For productive purposes (Rs.)	Nil	80.0 (40.6)	31.34 (11.2)	65.0 (9.3)
Source of Debt (percent)				
(a) Institutional	-	1.2	4.8	4.0
(b) Non-Institutional	100.0	98.8	95.2	96.0

Note: Figures in brackets are percentage figures.

Source: Rural Labour Enquiry Reports, 1950-51, 1956-57, 1964-65, and 1974-75.

The above table shows that debt is incurred by agricultural labourers in U.P. mainly for meeting household consumption needs and the magnitude of debt per household has been going up steadily, almost the whole of which is met by non-institutional sources. Institutional credit continued to have only an insignificant role in the rural areas though its position improved a little. Even where

co-operative credit societies have been established, they have not caught the imagination of agricultural labour households who still go to the traditional sources of credit, viz. local money lenders, shop keepers, employers etc. for the simple reason that loan from these sources is available much more conveniently even though at exorbitant rates of interest.

Co-operative credit societies, which were intended to release the helpless victims from the clutches of the local money lenders and at the same time inculcate in them a habit of thrift have yet to go a long way to assume the role they are expected to play.

Data on indebtedness among agricultural labour households in the region of Western U.P. were collected by agricultural Economic Research Section by conducting Economic Surveys in three selected villages of District Saharanpur. These villages were Shamaspur, Ghiana and Sanoli. Three separate surveys of these villages were conducted during 1955-56. Labour households covered by the surveys included both agricultural and non-agricultural labour households. 90.5 per cent and 83.3 per cent of the total labour households were in debt in the villages of Sanoli and Shamaspur respectively. Thus in the surveys it was found that most of the labour households were in debt. In all these

villages cooperative credit societies were as yet non-existent.[1]

Detailed districtwise data of the burden of debt on agricultural labour in other districts of Western Uttar Pradesh are not available. But whatever data are available show that most of the agricultural labour households are in debt and the magnitude of debt per household has been going up steadily.

Position of Employment:

The terms employment and unemployment, when applied to agricultural labourer, do not have the same meaning as in the case of industrial workers. This is due to the seasonal character of agricultural operations. The majority of agricultural workers remain unemployed during the bleak season. Job opportunities outside the agricultural sector are not adequate for absorbing the labour rendered redundant during lean agricultural season. For a proper understanding of the real situation, it is, therefore, more meaningful to have an estimate of the number of days of employment and unemployment rather than to classify labour force into employed and unemployed.[2]

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1. Continuous Village Surveys, 1955-56, Village-Shamaspur and Ghiana, District - Saharanpur, Agricultural Economic Research Section, p.54.

2. Rural Labour Enquiry, 1974-75, Final Report on Employment and Unemployment of Rural Labour Households, Part I, Labour Bureau, p.96.

Data on employment and unemployment were published in different Rural Labour Enquiry Reports. But these data are not exactly comparable due to the use of different methodology for quantitative estimates of employment and unemployment in each Rural Labour Enquiry Report. In the first Agricultural Labour Enquiry, wage employment for half a day or more was counted as full day's occupation and less than that was ignored. In the Second Agricultural Labour Enquiry intensity of work was taken into account. Four intensity classes were laid down, viz. full, half, nominal and nil. A full day's work meant three-fourth or more of the normal working hours. One-fourth or more and less than three-fourth of the normal hours was considered as work with 'half' intensity. Less than one-fourth was deemed as nominal work, with one eight intensity and 'nil' intensity signifying no work done during the reference period. In the tabulation of employment data the intensities were duly taken into account. Employment data of the first Agricultural Labour Enquiry tended to be on the high side.[1]

The following table shows employment of adult male agricultural labourers in Uttar Pradesh during 1950-51 and 1956-57.

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1. Rural Labour Enquiry, 1974-75, Part I, pp.97-98.

TABLE 5.8

Employment of Adult Male Agricultural Labourers During 1950-51 and 1956-57 in U.P.

Period	Total days employed		Total	Self-employed	Grand Total
	Agricultural work	Non-agricultural work			
1950-51	255.00	34.00	289.00	32.00	321.00
1956-57	173.80	36.95	210.75	49.00	259.75

Source: Report on the Second Agricultural Labour Enquiry 1956-57, Vol.XII, U.P., p.23.

Here agricultural labour includes both casual and attached labourers. The total employment decreased from 321 days in 1950-51 to 260 days in 1956-57. This fall in wage employment may be due to substitution of family labour for hired labour. However, in view of the differences in the methods adopted in the collection of employment data during the two periods covered by the Enquiry it is not possible to state firmly that the wage employment position deteriorated significantly during the period of the Second Agricultural Labour Enquiry.[1]

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1. Report on the Second Agricultural Labour Enquiry, 1956-57, U.P., p.23.

A major proportion of the agricultural labourers are casual workers who are employed on daily wages for short and unspecified periods when there is demand on the farm. Attached labourers form only a small proportion of agricultural labourers in U.P. They get employment as regular employees on the farms of their masters on a contract basis, oral or written; the period of contract ranging from three months to one year. During 1956-57 wage paid employment of adult male casual and attached agricultural labourers was 181 days and 259 days respectively.[1]

The average annual days of wage employment of usually occupied male agricultural labourers in U.P. during 1964-65 and 1974-75 was 225 days and 221 days respectively.A plausible explanation for this decline in days of wage-paid employment may be the relatively larger increase in the labour force as against the increase in employment opportunities.[2]

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1. Op.cit., pp.20-22.

2. Rural Labour Enquiry, 1974-75, Part-I, p.100 and 122.

The following table gives the number of days of employment of male and female agricultural labourers in a year in agricultural activities:

TABLE 5.9

Full days in a year of Wage-paid employment in agriculture per agricultural labourer in Uttar Pradesh

	Agricultural Labour Households		
	1956-57	1964-65	1974-75
Adult Male	174	189	200
Adult Female	96	102	124

Note: The Rural Labour Enquiry of 1977-78 does not give data on employment of agricultural labourers.

Source: Jemmol Unni, 'Agricultural Labourers in Rural Labour Households, 1956-57 to 1977-78, Changes in Employment, Wages and Incomes', Economic and Political Weekly, Vol.XXIII, No.26, June 25, 1988, Review of Agriculture, p.A-63.

The above data show that female agricultural labourers get employment for shorter periods in agricultural operations compared to male agricultural labourers. District-wise data of employment of male and female agricultural labourers for Agra and Meerut divisions are not available.

The sample survey by R.C. Saxena covering the Meerut district during 1964-65 shows the relative position of both

types of sample agricultural labour households, i.e those with land and those without land, with regard to the number of days of employment in agricultural occupation.

TABLE 5.10

Employment of Economically Active Members in Agricultural Labour Sample Households, Meerut District

Classification	Number of days per year
A. With Land	
Employment in the year 1964-65	286.56
B. Without Land	
Employment in the year 1964-65	290.39
A and B	289.86

Source: R.C. Saxena, Agricultural Labour, Wages and Living Conditions in Meerut, Bombay, 1969.

According to the above table each earning member in the sample households worked for 290 days in a year in the district.

The total sample of agricultural labourers in Meerut district consisted of 1082 casual labourers and 682 regular labourers. All the regular agricultural labourers were found at work on the day of the enquiry. But only 83.27 per cent of casual agricultural labourers were found at work; and

16.73 per cent of them had been absent from work on that day.[1]

Agricultural labourers, irrespective of their classification into casual and regular categories, work in similar activities. These activities can be broadly classified into agricultural and non-agricultural.

Agricultural activities refer to work as agricultural labourer on other people's land and cultivation of their own land; non-agricultural activity refers to work performed in other sectors not connected with agricultural field and self-employment in vocations other than cultivation.[2]

Taking both agricultural and non-agricultural activities, on an average agricultural labourers got employment for 319 days during 1964-65 in the Meerut district.[3]

Taking the busy season into account the normal working day consisted of 11 working hours as the greater number of labourers, both regular and casual, were found to be working for this period. The working hours are less in slack season,

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1. R.C. Saxena, Agricultural Labour, p.108.
2. Ibid., p.109.
3. Ibid., p.109.

during which the workers are mostly required to work for 9 hours a day.[1] Long working hours show a greater degree of exploitation of landless labourers.

'Persons unemployed' were taken to be all those persons who, on the day of enquiry, were without a job and were available for, and seeking, work. However, those persons were not included among the unemployed, who were unpaid family workers or were such as were neither working nor seeking any work.[2]

Unemployment among the regular sample agricultural labourers was not marked. The average period of unemployment of casual agricultural labour was 64 days during 1964-65 in the Meerut District.[3]

The Green Revolution has tended to create additional employment opportunities though not at an adequate pace. The increase in irrigated area and the consequent changes in cropping intensity and cropping pattern have been among the most important forces working on the demand side. The introduction of HYVs have also exerted a positive effect on labour demand in agriculture.[4]

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1. R.C. Saxena, Agricultural Labour, p.129.
2. Ibid., p.132.
3. Ibid., p.134.
4. Ajit Kumar Singh, The Dynamics of Rural Transformation, The Case of U.P., 1951-81, p.391.

On the other hand the growing mechanisation of agricultural operations, particularly the use of tractors, irrigation equipment and threshers had a tendency to displace human labour. The pace of mechanisation has been moderate in U.P. except in a few Western districts.[1]

TABLE 5.11

Employment of Human Labour on Selected Farms in Muzaffarnagar District (Adult Mandays per Hectare)

Farm Size group (in hectares)	Total Human Labour		Family Labour		Hired Labour		Hired Labour as percentage of total labour	
	1954-57	1966-67	1954-57	1966-67	1954-57	1966-67	1954-57	1966-67
Below 2.88	194	142	160	125	36	17	0.19	0.12
2.88 - 4.72	134	116	102	89	32	27	0.24	0.23
4.72 - 6.97	116	111	80	72	36	39	0.31	0.36
6.97 - 10.66	109	90	67	51	42	39	0.38	0.44
10.66 and above	80	87	44	39	36	48	0.45	0.54
Average	119	99	82	69	37	40	0.31	0.40

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation, The Case of Uttar Pradesh, 1951-81, p.396.

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1. Op.cit., p.391.

The above table shows that the decline in labour utilisation on all size groups was mainly on account of smaller use of family labour. The use of hired labour shows a sharp decline only in case of the smallest size group. Utilisation of hired labour has remained at more or less the same level on size groups between 2.88 hectares and 4.72 hectares. But it has clearly gone up in case of farms of above 10.66 hectares. It means that the class of rich farmers are employing a larger number of labourers on their farms.

Studies made by Joshi, Bhal and Jha for the period 1966-67 to 1977-78 using data from various secondary sources show that the direct effect of the new technology on employment per hectare has been negative both in East and West U.P. as well as in the State as a whole. The only exception to this was the case of lands under wheat crop in East U.P. where employment of landless labour increased due to a greater use of HYV seeds; which required more labourers for irrigation, weeding, spraying and other operations. But the displacement effect was significantly higher in western U.P. while irrigation, HYVs and their interaction were found to exercise a positive influence on labour use, they were not strong enough to counter balance the negative employment effect of mechanised sowing, ploughing, threshing and

irrigation, which were being practiced on a larger scale on farms in Western U.P.

Caste and Agricultural Labour:

According to R.S. Mathur, "In a predominantly agricultural economy, the relative position of a community is dependent upon its relative share in the ownership of cultivable land; and the implementation of the Zamindari Abolition and Land Reforms Act, 1950 and Land Ceiling Act, 1960, have not been sufficiently effective so as to improve the economic position of Scheduled Castes".[1]

Table 5.12 gives the caste-wise distribution of cultivators and agricultural labourers in Uttar Pradesh in 1961.

Only 53 per cent of the workers among Scheduled Castes as against about 76 per cent in the non-Scheduled Caste population are cultivators. As against this nearly, 29 per cent of the workers among Scheduled Castes are engaged as agricultural labourers whereas the corresponding percentage for non-scheduled caste workers is only about 7. This shows a larger amount of landlessness among Scheduled Castes.

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1. R.S. Mathur, 'Sources and Forms of Discrimination Against Scheduled Castes', Rural Labour in India, ed. S.M. Pandey, New Delhi, 1976.

TABLE 5.12

Caste-wise Percentage Distribution of Cultivators and Agricultural Labourers in U.P. in 1961

	Scheduled Caste population			Non-Scheduled Caste population		
	Persons	Males	Females	Persons	Males	Females
Total workers	100.00	100.00	100.00	100.00	100.00	100.00
Cultivators	52.96	56.09	45.98	76.36	76.16	77.05
Agricultural Labour	28.51	24.21	38.07	7.13	6.06	11.10

Source: R.S. Mathur: Sources and Forms of Discrimination Against Scheduled Castes, in Rural Labour in India, edited by S.M. Pandey, Published by K.K. Bhargava, for Shri Ram Centre for Industrial Relations and Human Resources, New Delhi, 1976, p.143.

TABLE 5.13

Scheduled Caste Workers as per cent of Total Workers

	Scheduled Caste Workers as percent of total workers	
	Male	Female
All workers	22.48	32.56
Cultivators	17.60	22.37
Agricultural labourers	53.66	62.35

Source: R.S. Mathur, 'Sources and Forms of Discrimination Against Scheduled Castes', Rural Labour in India, p.144.

The above table also shows that the percentage of scheduled caste cultivators among total cultivators is lower in comparison with the percentage of non-scheduled caste cultivators. The size of land and the terms on which land is cultivated by scheduled castes are also relatively unfavourable. The census provides a three-fold classification of the nature of control that a cultivating household may exercise over land: (A) land may either be owned or held from government; (B) it may be held from private persons or institutions for payment in money, kind or share, and (C) it may partly be held from government and partly from private persons.

TABLE 5.14

Comparative Distribution of Cultivating Households by Nature of Interest in Land

State and Divisions	Scheduled Caste (SC)/ General Population (GP)	Nature of Interest in Land			Total
		A	B	C	
Uttar Pradesh	SC	83.50	6.66	9.84	100.00
	GP	89.53	3.22	7.25	100.00
Meerut Division	SC	93.93	2.35	3.72	100.00
	GP	95.68	1.16	3.16	100.00
Agra Division	SC	91.30	2.47	6.23	100.00
	GP	94.00	1.26	4.74	100.00

Source: R.S. Mathur, 'Sources and Forms of Discrimination Against Scheduled Castes', Rural Labour in India, p.145.

A large proportion of households among the Scheduled Castes as also among the general population are either owners or hold land directly from government.[1] Scheduled Caste households owning or holding land directly from government constitute a lower proportion relatively to such households in the general population. This disparity is more marked in the divisions where Zamindari system existed. While in Agra and Meerut divisions, where Bhaiya Chara system prevailed, it is insignificant.[2] Baden - powell defined Bhaiya Chara System as a system in which a number of villages not originally joint, and where no landlord class existed, became joint under British land settlement, by adopting the joint liability for the payment of revenue, when the joint lands were divided it was done in proportion to the original holding or in proportion to the amount of revenue paid.[3]

The proportion of households among the scheduled castes in categories 'b' and 'c' relatively to that of households in the general population is consistently high in both the

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1. R.S. Mathur.,'Sources and Forms of Discrimination Against Scheduled Castes', Rural Labour in India, p.145.

2. Ibid., p.145.

3. Baden, Powell, The Land Systems of British India, Volume II, Oriental Publishers, 1974, p.115.

divisions. According to R.S. Mathur, to the extent acquisition of land under 'b' and 'c' makes a class of people vulnerable to exploitation by private persons who actually own land, scheduled castes reflect, a higher degree of vulnerability to such exploitation relatively to the rest of the population.[1] This may be due to the absence of any special legal provision in U.P. to enable scheduled castes to acquire more secure tenurial rights. They, therefore, because of their weaker economic and social position, did not benefit to the same extent, as the rest of agricultural population, from the Zamindari Abolition Act, 1950.[2]

In the Agra and Meerut division scheduled castes cover sixty four sub-castes which are given in Appendix 5.3.

The majority of agricultural labourers belong to scheduled castes and scheduled tribes. In these two divisions the proportion of scheduled caste agricultural labourers to total agricultural labourers varied between 66 per cent in Saharanpur and 39 per cent in Dehradun in 1951 (Appendix 5.1). In 1981 the the proportion of scheduled

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1. R.S. Mathur, 'Sources and Forms of Discrimination Against Scheduled Castes', Rural Labour in India, p.146.

2. Ibid., p.146.

caste agricultural labourers varied between 51 per cent in Bulandshahr and Mathura and 32 per cent in Muzaffarnagar district (Appendix 5.2). Thus the 1981 census figures indicate that there has been a fall in the proportion of scheduled caste agricultural labourers in most of the districts of Agra and Meerut divisions. In the mid-sixties, with the start of the Green Revolution the growth of small industry got accelerated, and increased governmental investment in roads and other rural infrastructural facilities further augmented non-agricultural job opportunities for the scheduled caste agricultural labourers.[1]

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1. Pratap, C. Aggarwal and Mohd. Siddiq Ashraf, 'Special May Be Less Than Normal', Rural Labour in India, 1976, p.130.

APPENDIX 5.1

Districtwise Number of Agricultural Labourers (and their dependents) and Number of Scheduled Caste and Schedule Tribe Agricultural Labourers (and their dependents) during 1951

District	Cultivating Labourers and their dependents			S.C. & S.T. Cultivating Labourers and their dependents			Percentage of S.C. & S.T. agricultural labourers to total agricultural labourers
	Total	Males	Females	Total	Males	Females	
Dehra-Dun	7105	4402	2703	2771	1822	949	39
Saharanpur	130648	72685	57963	85974	46481	39493	66
Muzaffarnagar	232477	127209	105268	107656	59785	47871	46
Meerut	90032	49692	40340	49504	27822	21682	55
Bulandshahr	78554	43687	34867	39253	21229	18024	50
Aligarh	140852	79029	61823	58784	32055	26729	42
Mathura	17756	10217	7539	9489	5157	4332	53
Agra	84666	46678	37988	41980	22571	19409	50
Mainpuri	30413	17758	12655	12976	7724	5252	43
Etah	66082	38191	27891	28227	15945	12282	43

Source: Census of India, 1951. Volume II. Uttar Pradesh. Part II-C-Age and Social Tables and District Census Handbooks, 1951.

APPENDIX 5.2

Districtwise Number of Agricultural Labourers and Number of Scheduled Caste and Schedule Tribe Agricultural Labourers during 1981

District	Total Agricultural labourers			S.C. & S.T. Agricultural Labourers			Percentage of S.C. & S.T. agricultural Labourers to total labourers
	Total	Males	Females	Total	Males	Females	
Dehra-Dun	19682	17785	1897	6868	6124	744	35
Saharanpur	224172	218374	5738	100180	96263	3917	45
Muzaffarnagar	182034	175979	6055	58284	54544	3740	32
Meerut	144910	139581	5329	59283	55980	3303	41
Bulandshahr	111310	107503	3807	56471	52914	3557	51
Aligarh	129490	127093	2397	57776	56483	1293	45
Mathura	64768	62735	2033	33275	32182	1093	51
Agra	74946	73213	1733	37356	36427	929	50
Mainpuri	50357	49922	435	24265	24052	213	48
Etah	64114	63416	698	26682	26318	364	42

Source: (1) Census of India, 1981. Series 221. Uttar Pradesh Part-II. B. Primary Census Abstract.

(2) Census of India. 1981. Series 22. Uttar Pradesh. Paper 2 of 1982. Primary Census Abstract for Scheduled Castes and Scheduled Tribes.

APPENDIX 5.3

List of Scheduled Castes in Uttar Pradesh

1. Agariya
2. Badi
3. Baheliya
4. Badhik
5. Baiga
6. Baiswar
7. Bajaniya
8. Bajgi
9. Balahar
10. Balai
11. Balmiki
12. Bangali
13. Banmanus
14. Bansphor
15. Barwar
16. Basor
17. Bawariya
18. Baldar
19. Beriya
20. Bhantu
21. Bhuiya
22. Bhyyial
23. Boshah
24. Chamar, Dhusia Jhusia or Jatava
25. Chero
26. Dabgar
27. Dhangar
28. Dhanuk
29. Dharkar
30. Dhobi
31. Dom
32. Domar
33. Dhusadh
34. Dhaisiya
35. Gharami
36. Gual
37. Habuna
38. Hari
39. Hela
40. Halabaz
41. Hanjar
42. Kapariya
43. Karwal
44. Khairaha
45. Khorot
46. Kharwar (excluding Benbansi)
47. Khatik
48. Kol
49. Korwa
50. Lalbegi
51. Majhwar
52. Mazhabi
53. Musahar
54. Nat
55. Pankha
56. Parahiya
57. Pasi or Tarmali
58. Patari
59. Rawat
60. Saharya
61. Sanaurhia
62. Sansiya
63. Shilpkar
64. Turaiha

Source: Census of India, 1961, Volume XV. U.P., Part-V-A(i), Special Tables for Scheduled Castes, (Tables SCT-I Part A and SC-I), Manager of Publications, Delhi, 1965, p.ii.

CHAPTER VI

CEILING LEGISLATION AND CHANGES IN DISTRIBUTION OF HOLDINGS

The U.P. Zamindari Abolition Committee proposed that "no limit be placed on the maximum area held in cultivation either by a landlord or a tenant. Everybody, now in cultivatory possession of land, will continue to retain his whole area."[1] The Committee argued that Ceilings might cause acute distress to the landless as dismemberment of large holding would displace a large number of agricultural labourers for whom it would not be possible to find alternative occupation within a reasonable time.[2] Therefore, U.P. Zamindari Abolition Act of 1950 imposed restrictions only on the future acquisition of land. According to the Act no one could acquire a holding, in future, beyond 30 acres. An amendment made in 1958 restricted the future acquisition to 12 1/2 acres. But there was no provision in this act for the imposition of maximum limit on the existing holdings. This was provided for, a decade later, under the Imposition of Ceilings on land Holdings Act, 1960.

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1. Report of the U.P. Zamindari Abolition Committee, Vol.I, Allahabad, 1948, p.566.
2. D. Thorner, The Agrarian Prospect in India, Allied Publishers Ltd., New Delhi, 1976, p.54.

The First Five Year Plan had made only a passing reference to the question of Ceiling on land holdings. "We are in favour of the principle that there should be an upper limit to the amount of land that an individual may hold". But the framers of the Plan were not hopeful that the measures would release much acreage for distribution to the landless.[1]

The Panel on Land Reforms set up by the Planning Commission in 1955 did indeed go a step further and made a positive recommendation for the enactment of ceiling legislation for reducing inequalities in land ownership and income and for satisfying the land hunger of the rural poor. But the Report of this panel did not have much impact as agrarian reform was a state subject.[2]

The Second Five Year Plan recorded some advance over the earlier position and recommended ceiling legislation for giving to the rural poor a sense of opportunity at par with other sections of the community. It suggested that a reasonable ceiling should be fixed at three times a "family holding". A family holding was deemed to be capable of

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1. Report of the National Commission on Agriculture, Part XV, p.71.

2. Ibid., p.72.

yielding an annual income of Rs. 1200/-. Whether the ceiling was to be fixed per individual or per family taken as a unit was left to the State Government to decide.[1]

The Third Five Year Plan made no new and positive proposals but only reiterated the position of the Second Plan.[2]

Thus for nearly fifteen years after the attainment of freedom, ceiling on big land holdings remained both theoretically and practically, a nebulous item in the scheme of agrarian reforms in India.

The picture began to change after 1960. Ceiling laws were enacted and enforced actually in two phases; the earlier phase covering the period from 1960 to 1972, before the National Guidelines were laid down, and the second comprising the period after the adoption of the Guidelines in 1972.[3] As ceiling legislation was a state subject, each state enacted its own ceiling laws. The main objective of the ceiling legislation was to provide land for landless agricultural labourers.[4]

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1. Report of the National Commission on Agriculture, Part XV, p.72.
2. Ibid., p.72.
3. Ibid., p.72.
4. Ibid., p.76.

Ceiling on land holding was enforced for the first time in Uttar Pradesh on January 3, 1961, with the coming into force of the U.P. Imposition of Ceiling on Land Holdings Act 1960. Under this Act, a ceiling of 40 acres of fair quality land for a family of five members was fixed, but as the ceiling depended on the quality of the land, a tenure holder could retain land upto 128 acres besides all grove land and land covered by other exemptions.[1] "Fair quality" land was defined as that land whose hereditary rate was rupees 6 per acre. All the surplus land was made to vest in the State Government, the tenure holder being entitled to receive compensation in lieu thereof.

The existing Act in U.P. was amended with effect from June 8, 1973 by the amending Act of 1972 in accordance with the National Guidelines on Ceiling on Land Holdings issued by the Centre to all the State Governments. The family was redefined, and a ceiling of 7.30 hectares (18 acres) of irrigated land was fixed for each tenure holding family, subject to an overall ceiling of 33 acres.[2]

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1. P.T. George, and K.N. Raju, Utilisation of Surplus Land - A Study in Four State, Vol.3, U.P. National Institute of Rural Development, Hyderabad, 1981, p.1.

2. Op.cit., p.2.

The following categories of land were exempted from ceiling:

The Act allowed exemption of plantations of tea, coffee and rubber, existing orchards, bonafide cattle breeding, dairy and wool raising farms and compact well-managed mechanised farms, lands held by the Agricultural Universities and Research Institutions and religious, charitable and educational trusts of public nature.[1]

The land held by the Bhoodan Yagnya Committee, cooperative banks, nationalised banks, central or state Governments and industrial or commercial undertakings for non-agricultural purposes was also exempted from the ceiling, law.[2] The Act, however, did not exempt sugarcane farms.

All the above provisions granting exemption were used by the vested interests to evade ceiling on holdings and thus in actual practice reduced the extent of surplus land available for distribution among landless agricultural labourers.[3]

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1. P.S. Appu, Ceiling on Agricultural Holding, Ministry of Agriculture, Department of Agriculture, New Delhi, 1972, p.63.
2. Ibid., p.64.
3. Ruddar Dutt and K.P.M. Sundharam, Indian Economy, S.Chand and Co. (Pvt.) Ltd., New Delhi, 1987, p.432.

The law was again amended with effect from January 17, 1975 so as to eliminate the loopholes and ensure that enough land became available for allotment to landless persons. In the process of implementation of the previous law, some more defects had come to the notice of the Government, and it was considered necessary to amend the law further. Accordingly, an ordinance was promulgated on 10th October 1975 (since replaced by U.P. Act number 20, 1976). By amending the Act, the land covered by guava-groves was excluded from the definition of grove land. Also restriction was imposed on transfer of land during the course of ceiling proceedings.[1] It was provided that the tenure holder may, at his own will, surrender his land which was likely to be declared surplus, and he was allowed to gather the crop standing on the surplus land only on the date of surrendering the possession of the surplus land under Section 14 (1). A new section inserted by the amendment provided that the tenure holder shall be liable to pay damages for occupation and use of surplus land, penal provisions made in the Act referred to both fine and punishment for those who furnished incorrect information regarding the holdings or occupied the surplus land in an unauthorised manner, as also for those who continued to occupy land declared surplus.[1]

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1. P.T. George and K.N. Raju, Utilization of Surplus Land - A Study in Four States, Vol.3, U.P., p.2.

2. Ibid., p.2-3.

The U.P. Imposition of Ceiling on Land Holdings Act, 1960, empowered the State Government to use or permit the use, either temporarily or permanently, of surplus land for any purpose for which such land could have been acquired under the Land Acquisition Act, 1894.[1] Under the provisions of the Act, the Collector is empowered, on behalf of the State Government, to allot the surplus land vested in the State under the following scheme of priorities.

(1) Landless widow, sons, unmarried daughters or parents residing in the circle, of a person who lost his life by enemy action, while in active service in the Indian Armed Forces.

(2) A person residing in the circle, who has become wholly disabled by enemy action while in active service in the armed forces of the Union.

(3) A landless agricultural labourer residing in the circle and belonging to a scheduled caste or scheduled tribe.

(4) Any other landless agricultural labourer residing in the circle.

(5) a bhumidhar, Sirdar or asami residing in the circle holding land less than 1.26 hectares (3.125 acres). The total holding not to exceed 3.125 acres, including allotted land.

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1. Ibid., p.3.

(6) a landless person residing in the circle who is retired, released or discharged from service other than service as an officer in the armed forces.

(7) a landless freedom fighter residing in the circle who has not been granted political pension.

(8) any other landless agricultural labourer belonging to scheduled caste or scheduled tribe, not residing in the circle but residing in the Nyaya panchayat circle referred to in section 42 of the U.P. Panchayat Raj Act, 1974.[1]

The term landless refers to a person who and whose spouse and minor children hold no land as bhumidhar, sirdar and asami and also held no lands as such within two years immediately preceding the date of allotment.[2]

The Act of 1960 also made it clear that no allottee will acquire any right in the land settled with him or let out to him under the relevant provisions in derogation of terms and conditions of such settlement or lease. The allottee will not have an absolute right to transfer his interest or possession in such land; he is given only a limited right to mortgage the land in order to return the

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1. P.T. George and K.N. Raju, Utilization of Surplus Land - A Study in Four States, pp.3-4.

2. Ibid., p.4.

loan taken from the state government by way of Takavi or from a cooperative society or from a scheduled bank.[1]

By the end of June, 1980, an area of 2,79,531 acres of land was declared as surplus available with 32,277 land holders in Uttar Pradesh. Out of the total land declared surplus 90.6 per cent was taken possession by the State. Under the provisions of the Act, the surplus land vested with the State Government could be distributed among landless agricultural labourers, small farmers (i.e., bhumidhars, sirdars and asamis) who had less than 3.125 acres of land and among other persons to whom grove land of less than 5 acres was given in one chak. Out of the total surplus land taken possession of (2.53 lakh acres), 1.78 lakh acres (70.01 per cent) were distributed to 1.81 lakh allottees/ beneficiaries of different categories; 44.569 acres were settled with Gram Sabha and various government departments for public purposes while 31,169 acres were yet to be distributed. The surplus land not taken possession of due to stay orders by courts and non-completion of formalities was about 26,000 acres. Among the total allottees, (1,80,725 persons), landless agricultural labourers who, were given land constituted 91.6 per cent; small farmers holding less than 3.125 acres each accounted for 8.1 per cent and the rest (0.3 per cent) was

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1. P.T. George, and K.N. Raju, Utilisation of Surplus, Land - A Study in Four State, Volume 3, Uttar Pradesh, p.5.

given to grove holders of less than 5 acres for grove land. The area of surplus land allotted, on average, to the landless agricultural labourers was about one acre per family while small farmers were allotted 0.88 acre each, and 0.83 acre was given to others who had grove land of less than 5 acres. The scheduled caste and scheduled tribe allottees constituted 73.8 per cent and 'other castes' 26.2 per cent of the total allottees in the State.[1]

TABLE 6.1

Statement Showing Districtwise Progress of Distribution of Surplus Land to the Allottees, Settlement of Land with Gram Sabha, Horticulture Department etc. in the Agra and Meerut Divisions in 1980

Name of District	Area declared surplus (Acres)	Area taken possession of (Acres)	Total number of allottees	Total Area distributed (Acres)	Percentage of the total area distributed to the total area taken possession of 1980
Dehradun	1,161	1,044	259	103	9.86
Saharanpur	5,430	5,391	6,651	4,322	80.17
Muzaffar-nagar	6,590	6,356	3,380	2,988	47.01
Meerut	1,771	1,308	1,275	971	74.23
Bulandshahr	2,170	1,990	1,370	1,321	66.38
Aligarh	3,895	3,647	4,714	2,678	73.43
Mathura	2,913	2,306	2,015	1,888	81.87
Agra	1,428	1,109	1,331	751	67.71
Mainpuri	1,782	1,782	1,780	1,448	81.25
Etah	1,668	1,599	1,472	1,462	91.43

Source: P.T. George and K.N. Raju, Utilisation of Surplus Land -A Study in Four States, Volume-3, Uttar Pradesh, p.17.

1. P.T. George and K.N. Raju, Utilisation of Surplus Land - A Study in Four States, pp.6-7.

The above table shows that in all the districts of Agra and Meerut divisions except Mainpuri, area declared surplus was greater than the area taken possession of by the Government. Consequently the table shows that the whole of the area taken possession of had not been distributed. The proportion of the area distributed to total area taken possession of by the Government varied between 9.86 per cent in Dehradun to 91.43 per cent in Etah. Except in Dehradun district in all the other districts under study the proportion of the area distributed to the total area taken possession of was quite significant.

Among all the districts in U.P., Lakhimpur Kheri ranked first with regard to the extent of surplus land distributed, which was 20,860 acres, followed by Bahraich district, 14709 acres, Mirzapur, 9978 acres and Allahabad, 9735 acres (See Appendix 6.1) The data in the Appendix 6.1 show that the distribution of surplus land in Western part of U.P., which is agriculturally more developed was less as compared to Central and Southern parts which are backward and mostly dry, and where lack of supply of water is a major constraint to agricultural development.

It is widely held that very often surplus land surrendered to the state by the surplus - land holders was of poor quality, often uncultivated or barren land without water facility. Sometimes lands under tanks, river beds,

canals or those more prone to floods were surrendered.[1]

Lakhimpur Kheri and Allahabad districts were selected by P.T. George for intensive study of the impact of land legislation on landless agricultural labourers. The Western and Eastern regions of U.P. were purposely omitted for selection since very little land was distributed in Western U.P., while in Eastern parts a survey could not be conducted due to a severe drought during 1979-80.

The findings of P.T. Geogre's survey show that the average size of the allotted land was only 0.84 acre in Allahabad and 1.6 acres in Lakhimpur Kheri. A few among the beneficiaries also owned some land. The average size of land previously owned by the beneficiaries was 0.28 acre in Allahabad and 0.25 acre in Lakhimpur Kheri.[2]

The occupational pattern of the beneficiaries in the reference year 1979-80 showed that on the average, taking all adults, they worked for 103 days in the year on other people's farms, as against 63 days on their own, including the allotted land. This implied that they remained, even after the grant of allotted land, predominantly agricultural

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1. P.T. George and K.N. Raju, Utilisation of Surplus Land, A Study in Four States, p.9.

2. Ibid., p.193.

labourers.[1] This shows the severe limitation of the impact of land redistribution on the landless classes.

To a direct question as to whether the allotment of land created fuller employment opportunities for them and their family members, 88 per cent of the beneficiaries replied 'No' in Allahabad district and 55 per cent in Lakhimpur Kheri. For the respondents cultivation was the main occupation for 16.8 per cent before land allotment. After the allotment the percentage rose to 37.6. The major occupation was agricultural labour for 65.1 per cent before land allotment; this declined to 43.6 per cent after allotment. The inference arising from these findings is that in the majority of cases the land alotted did not change the occupational pattern of the beneficiaries in any substantial manner.[2]

As has been pointed out earlier in the U.P. Imposition of Ceiling on Land Holding Act, 1960, provisions were made exempting certain categories of land, from the operation of the ceiling law. These exemptions have played a very significant role in rendering the ceiling laws ineffective and drastically reducing the area of land liable to be declared as surplus.[3]

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1. Op.cit., pp.193-94.
2. Ibid., pp.194-95.
3. P.S. Appu, Ceiling on Agricultural Holdings, p.49.

The ceiling law therefore, proved to be of limited value. Also the bigger landholders were given ample warning of the possible advent of ceilings. They had taken the necessary steps to divide up their property among their relatives in order to make ceiling laws ineffective in practice.[1]

To achieve the objective of ensuring, at least, a modicum of the bare necessities of life to the lower strata of the rural population and doing away with the glaring disparities and injustices in the Indian society a programme of redistribution of land should have been adopted in combination with a series of other measures. Important measures like protection of homestead tenants and sharecroppers, massive rural works programme backed by the mobilisation of adequate additional resources and the channelling of a substantial portion of institutional credit to small farmers should have accompanied land redistribution.[2]

Another method of alleviating the condition of landless labourers could have been the distribution of waste lands among them, and the grant of financial and other facilities so that the land could have been made cultivable over a period of time.

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1. Daniel Thorner, and Alice Thorner, Land and Labour in India, p.8.

2. P.S. Appu, Ceiling on Agricultural Holdings, p.60.

According to the land utilisation statistics for the year 1957-58, the state of Uttar Pradesh had an area of 63.94 million acres classified as under:

TABLE 6.2

		Acres in Million
i)	Forest Land	5.78
ii)	Land not available for cultivation	
	a) Barren and Un-cultured land	2.89
	b) Land put to non-agricultural use	4.64
iii)	Other uncultivated land excluding fallows	
	a) Culturable waste	4.29
	b) Permanent pastures and other grazing land	0.07
	c) Land under misc. tree crops and groves	2.21
iv)	Current fallows	0.35
v)	Fallows other than current fallows	3.36
vi)	Net area sown	40.08
TOTAL		63.94

Source: India, Wastelands Surveys and Reclamation Committee (1959), Report on Location and Utilisation of Wasteland in India, Part 10, Uttar Pradesh, p.7.

The total area classified as "other uncultivated land excluding fallows" and "fallows other than current fallows" was 10.20 million acres. The district-wise distribution of

the area under each of the above heads is given in Appendix 6.2.

According to the land utilisation statistics the total area of 10.20 million acres under the heads "other uncultivated lands excluding fallows" and "fallows other than current fallows" an area of 30,460 acres only was located in the State for reclamation in blocks of 250 acres or more in eight districts of U.P. covered by the Wastelands Survey and Reclamation Committee. It was observed that most of the waste lands were available in small-sized blocks. On the other hand, the results of soil surveys carried out by the Agriculture Department in the districts of Kanpur, Fatehpur, Aligarh and parts of Mainpuri and Unnao, strongly support the impression that there are large areas of wastelands in the State, since in these five districts alone, over 2.8 lakh acres of Wasteland (usar) in blocks of 200 acres or more have been discovered.[1]

The wastelands offered for reclamation in the State may be broadly divided into the following two categories; (i) Usar land, and (ii) lands infested with thick growth of jungle, bush and shrub.

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1. India, Wastelands Surveys and Reclamation Committee (1959), Report on Location and Utilisation of Wasteland in India, Part-10, U.P., p.47.

The distribution of wastelands in categories I and II in the different districts in 1957-58 is given below:-

TABLE 6.3

District	Area (in acres) available in Category		
	I		II
	a	b	
Aligarh	-	19867	-
Mainpuri	-	107171	-
Kanpur	7037	95866	-
Lucknow	6581	-	-
Fatehpur	-	6870	-
Unnao	-	51366	-
Allahabad	-	-	250
Banda	-	-	265
Bijnor	-	-	2028
Jalaun	-	-	5824
Pilibhit	-	-	8475
	13618	281140	16842

Note: Figures under the category I(a) were taken from the reports of District collectors.

Figures under the category I(b) were taken from the soil surveys carried out by the Agricultural Department, Uttar Pradesh. The Surveys were carried out only in five districts. These districts are Kanpur, Fatehpur, Aligarh, Mainpuri and Unnao.

Source: India, Wastelands Surveys and Reclamation Committee (1959), Report on Location and Utilisation of Waste-land in India, Part-10, U.P., p.8.

Soil surveys carried out by the Agricultural Department, Uttar Pradesh showed that in the districts of Aligarh and Mainpuri of Western U.P. 198687 acres and 107171 acres of Usar land had been offered for reclamation during 1957-58. Other districts of U.P. where land was available for reclamation were Kanpur, Lucknow, Fatehpur, Unnao, Allahabad, Banda, Bijnor, Jalaun and Pilibhit. Although no surveys were conducted in other districts, salinity and alkalinity were widely prevalent in the soils of the Hardoi, Rae Bareli, Pratapgarh, Azamgarh, Etawah, Agra and Mathura Districts.[1]

The term 'Usar' cover a wide range of infertile soils. There are certain types of usar which can be reclaimed more economically than others.[2] Over 50 per cent of usar land in the State, can, however, be readily reclaimed for agricultural purposes by the application of undecomposed bulky organic matter, together with the use of liberal quantities of irrigation water to leach out salts. This class of usar land offers the greatest scope for increasing agricultural production.

In the state of Uttar Pradesh, the wastelands located for reclamation are either owned by the Government or by the

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1. India, Wasteland Survey and Reclamation Committee (1959), Report on Location and Utilization of Wasteland in India, Part X, U.P. pp.8-9.

2. Ibid., p.9.

Gaon Samai.[1] Appendix 6.3 shows that most of the wastelands belong to the Government and only small percentage to the Gaon Samaj.

It was recommended by the Wastelands survey and Reclamation Committee, 1959, that Government should give serious attention to the reclamation of land for settling landless labourers and the members of scheduled castes and tribes. However, since the allottees would not have the means to undertake reclamation of usar on their own, assistance from Govt., both financial and technical, should be forthcoming in the ample measure.[2] Unfortunately this assistance has not been given in the period under discussion.

The cost of reclamation of usar land was estimated by the Committee at Rs.325 per acre including Rs.150 for irrigation. As this expenditure could not be met from the profits of cultivation in early years, it was recommended that 75 per cent of the cost of reclamation given by the State Government should be recovered in convenient instalments spread over a period of 15 years.[3]

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1. Op.cit., p.15.
2. Report on Location and Utilisation of Wasteland in India, Part-10, U.P., p.15.
3. Ibid., p.15.

Data on reclamation of land in U.P. after 1959 are not available; nor such data has been collected covering the districts in Agra and Meerut divisions. Therefore, it is not possible to have a clear picture of the availability and distribution of usar lands in the districts chosen for this study.

Impact of ceiling Legislation on the Holdings of Richer Peasants (Bhumidhars)

We can have an idea of the impact of ceiling legislation on the pattern of landownership in the state of Uttar Pradesh from the following table.

TABLE 6.4

Distribution of Ownership Holdings and Area Owned by Size Classes in Uttar Pradesh

Size Class in acres	Percent of Households			Percent of Area Owned			Percentage change Household		Area	
	1953-54	1961-62	1971-72	1953-54	1961-62	1971-72	1961-62 over 1953-54	1971-72 over 1961-62	1961-62 over 1953-54	1971-72 over 1961-62
0.01- 0.99	33.45	34.86	40.68	2.37	2.45	3.90	4.21	16.69	3.37	59.18
1.00- 2.49	22.44	21.38	23.25	10.11	9.89	13.55	-4.73	8.74	-2.18	37.00
2.50- 4.99	20.02	22.00	19.48	19.35	22.20	24.62	9.89	-11.46	14.72	10.90
5.00- 7.49	10.44	9.56	7.62	16.98	16.57	16.50	-8.43	-20.30	-2.42	-0.43
7.50- 9.99	5.27	4.55	3.73	12.10	11.08	11.52	-13.67	-18.03	-8.43	3.97
10.0-14.99	4.27	4.19	3.09	13.77	14.22	13.12	-1.88	-26.26	3.26	-7.74
15.0-19.99	1.83	1.67	1.09	8.43	8.10	6.69	-8.75	-34.74	-3.92	-17.41
20.0-24.99	0.75	0.69	0.51	4.41	4.35	4.01	-8.90	-26.09	-1.37	-7.82
25.0-29.99	0.39	0.43	0.20	2.82	3.27	1.93	10.25	-53.49	15.95	-40.98
30.0-49.99	0.70	0.51	0.27	6.76	5.39	3.38	-27.15	-47.06	-20.27	-37.30
50.0 & above	0.14	0.12	0.002	2.90	2.49	0.72	-14.29	-98.34	-14.14	-71.09
Total	100.00	100.00	100.00	100.00	100.00	100.00	-	-	-	-

Source: Ajit Kumar Singh, The Dynamics of Rural Transformation. The Case of Uttar Pradesh, 1951-81, Lucknow, 1984, p.283.

The above table shows that between 1953-54 - 1961-62, per cent of households to the total households and percent of area owned to the total area under all size classes has clearly gone up in the size group upto 1.0 acre, 2.5 to 5.0 acres and 25.0 to 30.0 acres, while all other size groups have registered a decline. As pointed out by Ajit Kumar Singh this pattern of change suggests that the splitting up of ownership holdings among family members so as to avoid the impact of ceilings has been the major factor behind the changes in land ownership, during this period.

During the period 1961-62--1971-72 the changes in the ownership pattern have been more pronounced. The proportion of households owning less than 2.5 acres of land has gone up, while all other size groups have experienced a decline. As far as the shift in area owned is concerned the size groups upto 5.0 acres and the group 7.5 to 10.00 acres have improved their position at the cost of comparatively larger size groups.

A clearer picture of changes in land distribution emerges when we look at the shares in area owned by the main categories of cultivators shown in the above table. Both the number of households of marginal farmers (upto 2.5 acres) and area owned by them registered a clear increase. The small farmers (2.5 to 7.5 acres) have also improved their share slightly in ownership holdings. The number of land holdings

and the area held by the medium and large farmers, on the other hand, have registered a distinct decline. About 7.5 per cent of total land owned was affected by the process of shift in the ownership pattern. Ajit Kumar Singh's study shows that the pattern of land distribution in U.P. has become slightly less skewed and inequitable between the period 1953-54 - 1971-72, as a result of the process of splitting up of holdings due to rising demographic pressure as well as the efforts of bigger land owners to divide their holdings among family members to by-pass the land ceiling legislation. But the ceiling legislation was not implemented very effectively and hence land holdings of rich peasants (bhumidhar) were not reduced to any significant degree in Uttar Pradesh. This would, probably, more true in case of Western Uttar Pradesh where the hold of rich peasants is greater.

From the point of view of farm incomes, employment and household well-being it is the area actually operated by a household which is important rather than the area owned by it. An operational holding has been defined as "all land which is wholly or partly used for agricultural production and is operated as one technical unit by one person alone or with others without regard to title, legal form, size or location".[1] It relates to the actual cultivator who may or

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1. Agricultural Census in Uttar Pradesh, 1970-71, Board of Revenue, U.P., Lucknow, 1974, p.31.

may not be the land owner. This implies that the holding may consist fully of owned land, rented land or a combination of both types of land. The cultivator of operational holding may be owner, a member of the owner's household, tenant share-cropper etc.

TABLE 6.5

Distribution of Operational Holding and Area Operated in U.P. 1953-54 and 1971-72

Size Class (in acres)	Percent of Holdings			Percent of Operated Area			Cumulative 1953-54	% of holding 1971-72	Cumulative 1953-54	% of Operated Area 1971-72
	1953-54	1971-72	Percent change	1953-54	1971-72	Percent change				
0.01- 0.99	32.71	20.40	-37.63	2.13	2.84	33.33	32.71	20.40	2.13	2.84
1.00- 2.49	20.90	29.36	40.48	9.05	12.79	41.33	53.61	49.76	11.18	15.63
2.50- 4.99	21.14	26.91	27.29	19.43	23.30	19.92	74.75	76.67	30.61	40.93
5.00- 7.49	10.89	11.23	3.12	16.96	17.78	4.84	85.64	87.90	47.57	58.71
7.50- 9.99	5.24	5.22	-0.48	11.56	11.98	3.63	90.88	93.12	59.13	70.69
10.0-14.99	4.69	4.04	-12.74	14.57	12.76	-12.29	95.51	97.16	73.70	83.47
15.0-19.99	1.97	1.47	-25.38	8.67	6.69	-22.84	97.48	98.63	82.37	90.16
20.0-24.99	0.82	0.66	-19.51	4.71	3.85	-18.26	98.30	99.29	87.08	94.01
25.0-29.99	0.57	0.27	-52.63	3.93	1.74	-55.73	98.87	99.56	91.01	95.95
30.0-49.99	0.60	0.31	-48.33	5.62	2.84	-49.82	99.47	99.87	96.63	98.77
50.0 & above	0.17	0.06	-64.71	3.37	1.22	-63.80	100.00	100.00	100.00	100.00

Source: Ajit Kumar Singh. The Dynamics of Rural Transformation. The Case of Uttar Pradesh. 1951-81. Lucknow, 1984. p.289.

The above table shows the distribution of operational holdings in U.P. in 1953-54 and 1971-72. There is a preponderance of marginal and small holdings in U.P. In 1953-54 more than half (53.61%) of the total operational holdings were below 2.5 acres in size and about three-fourths (74.75%) holdings were below 5.00 acres in size. These accounted for 11.18 per cent and 30.61 per cent of the area operated respectively. In 1971-72 about half (49.76%) of the

total operational holdings were below 2.5 acres in size and over three-fourths (76.67%) again were below 5.00 acres in size. These accounted for roughly one-sixth and two-fifths of the area operated respectively. In 1953-54 about 5 percent and in 1971-72 about 3 per cent of the total holdings were above 10 acres in size. They accounted for about 26 percent and 17 per cent of the total area respectively.

Looking at the changes in the distribution of operational holdings over time it can be observed that the degree of concentration has undergone a clear reduction between 1953-54 and 1971-72. Per cent of operational holdings to the total holdings under all size groups as well as area operated registered a sharp decline in the case of holdings above 10 acres. The main beneficiaries of this shift have been the farmers in the size groups upto 5.0 acres. Size groups between 5.0 and 10.0 acres also show a moderate improvement in their position. There has been a marked decline in the number of holdings below one acre accompanied by an increase in the area operated by this size class. It is possible that economic pressure is forcing some of these marginal landholders to seek jobs elsewhere and they are leasing out their land to relatives and others with marginal holdings.

The above discussion throws some light on the changes in the distribution of operational holdings in the whole of Uttar Pradesh. Since regionwise data on the distribution of operational holdings is not available for the period 1953-54 we can not say what changes have taken place in its distribution in the districts constituting Western Uttar Pradesh between 1953-54 and 1971-72. But the Agricultural census in Uttar Pradesh 1970-71 and 1976-77 collected regionwise data of operational holdings, which are significant for the purpose of the present study.

TABLE 6.6

Percentage increase or decrease in the number and area of operational holdings in 1976-77 over 1970-71 in Western Uttar Pradesh

Size Class (in hectares)	Number of holding (Percentage)	Area (Percentage)
Upto 1	+ 10.00	10.8
1 - 2	+ 5.9	5.4
2 - 4	+ 0.0	- 0.2
4 - 10	- 3.8	- 5.4
10 & above	- 24.5	-26.2
Total	+ 6.5	-0.5

Source: Agricultural Census in Uttar Pradesh, 1976-77, Lucknow, 1980, p.45 & 47.

The above table shows that the number of holdings and area operated increased in case of marginal (upto 1 hec.) and small holdings (1-2 hec.). In case of medium holding (2-4 hec.), the number of holdings shows no change but the percentage area decreased slightly. In case of large holdings (10 hec. & above) both number and area operated decreased significantly. Thus the process of structural transformation in Western U.P. is marked by a clear decline in the number of holdings and area operated by the large cultivators on the one hand and an increase in the number of marginal and small cultivators and area operated by them on the other. In Western U.P. as well as in Uttar Pradesh as a whole the degree of concentration of land in the hands of large farmers has undergone a distinct reduction.

APPENDIX 6.1

STATEMENT SHOWING DISTRICT WISE PROGRESS OF DISTRIBUTION OF SURPLUS LAND TO THE ALLOTTEES SETTLEMENT OF LAND WITH GRAMA SABHA, HORTICULTURE DEPARTMENT ETC. IN UTTAR PRADESH

Sl.No.	Name of the District	Area declared surplus (Acres)	Area taken possession (Acres)	Area Distributed	
				Total No. of allottees	Total area distributed (Acres)
1.	Bijnor	8,163	5,403	3,093	3,642
2.	Saharanpur	5,430	5,391	6,651	4,322
3.	Muzaffarnagar	6,590	6,356	3,380	2,988
4.	Meerut	1,771	1,308	1,275	971
5.	Bulandshahr	2,170	1,990	1,370	1,321
6.	Ghaziabad	1,589	1,318	359	391
Total		25,718	21,766	16,128	13,635
7.	Aligarh	3,895	3,647	4,714	2,678
8.	Mathura	2,913	2,306	2,015	1,888
9.	Agra	1,428	1,109	1,331	751
10.	Mainpuri	1,782	1,782	1,780	1,448
11.	Etah	1,668	1,599	1,472	1,462
12.	Bareilly	4,848	4,238	5,474	3,543
13.	Badaun	2,362	2,362	2,539	1,513
14.	Moradabad	5,413	4,948	5,175	4,021
15.	Shahjahanpur	8,623	8,623	2,412	2,136
16.	Pilibhit	3,737	3,737	1,299	1,257
17.	Rampur	2,715	2,256	5,297	5,870
Total		27,698	26,164	22,196	18,340
18.	Farrukhabad	2,440	2,351	1,617	1,472
19.	Etawah	1,757	1,621	2,199	1,255
20.	Kanpur	4,831	3,231	4,697	2,259
21.	Fatehpur	3,165	2,859	3,138	1,819

22. Allahabad	15,944	15,194	8,935	9,735
Total	28,137	25,256	20,586	16,540
23. Jhansi	4,973	4,525	2,136	2,728
24. Lalitpur	3,236	3,175	777	2,281
25. Jalaun	4,012	3,064	1,689	2,221
26. Hamirpur	10.962	10,962	3,927	8,751
27. Banda	10,153	9,326	4,530	7,931
Total	33,336	31,052	13,059	23,912
28, Varanasi	1,452	857	1,303	456
29. Mirzapur	19,686	16,671	6,401	9,978
30. Jaunpur	1,577	1,333	1,777	937
31. Chajipur	1,585	1,374	1,043	1,024
32. Ballia	3.563	3,200	2,207	1,728
Total	27,863	23,435	12,731	14,123
33. Gorakhpur	5,837	4,802	3,752	2,534
34. Deoria	5,168	4,613	4,832	2,813
35. Basti	5,595	4,636	4,006	3,163
36. Azamgarh	1,973	1,920	2,419	1,432
Total	18,573	15,971	15,009	9,942
37. Lucknow	2,220	2,102	2,220	1,590
38. Unnao	5,602	5,411	4,071	4,089
39. Rae Bareilly	3,930	3,930	4,088	3,212
40. Sitapur	10,981	10,930	9,532	8,585
41. Hardoi	6,842	6,370	5,648	4,432
42. Kheri	25,109	22,476	8,018	16,667
Total	52,774	51,219	33,577	38,575
43. Faizabad	3,542	3,542	2,995	2,136
44. Gonda	9,916	9,220	7,268	7,984
45. Bahraich	20,915	19,290	15,382	14,709
46. Sultanpur	4,029	3,678	3,480	2,645
47. Pratapgarh	3,433	2,986	1,628	1,738
48. Barabanki	4,738	4,650	3,665	3,452
Total	46,573	43,366	34,408	32,664
49. Nainital	5,869	3,427	1,455	1,478

50. Almora	2	-	-	-
51. Pittoragarh	-	-	-	-
Total	5,871	3,427	1,455	1,478
52. Chamoli	-	-	-	-
53. Uttar Kashi	-	-	-	-
54. Tehri Garhwal	-	-	-	-
55. Garhwal (Pauri)	141	141	10	7
56. Dehradun	1,161	1,044	259	103
Total	1,302	1,185	269	110
Grand Total	2,79,531	2,53,284	1,80,725	1,77,546

Source: P.T. George, and K.N. Raju, Utilisation of Surplus Land - A Study in Four States (Sponsored by the Ministry of Rural Reconstruction, Govt. of India), Volume-3, Uttar Pradesh, Hyderabad, 1981, pp.17-20.

APPENDIX 6.2

LAND UTILISATION STATISTICS FOR UTTAR PRADESH

DURING 1957-58 (DISTRICT-WISE)

	Total geographical area		Forest	Land not available for cultivation		Other uncultivated land excluding fallows					Net Area sown
	By Professional survey	By Village papers		Barren and unculturable land	Land put to non-agricultural uses	Culturable waste	Permanent pastures & other grazing lands	Misc.tree crops & groves	Current fallows	Fallows others current fallows	
Dehradun	768.646	713.107	472.301	6.400	38.786	8.568	1.031	37.888	27	8.663	139.443
Saharanpur	1.364.371	1.358.669	187.885	17.914	137.606	40.938	197	12.243	26.576	33.128	902.182
Muzaffarnagar	1.076.851	1.067.040	30.669	37.495	84.072	49.058	329	11.346	17.630	45.531	790.810
Meerut	1.486.298	1.484.300	24.373	50.121	112.526	71.919	15	9.412	9.563	47.677	1.158.694
Bulandshahr	1.207.987	1.248.196	27.342	72.379	32.761	74.282	398	19.125	1.301	43.021	937.587
Aligarh	1.242.496	1.260.329	12.022	103.014	70.678	37.251	947	12.452	294	45.975	977.696
Mathura	938.752	943.975	15.856	15.987	50.457	37.669	118	10.342	159	37.124	776.263
Agra	1.190.912	1.204.511	60.395	92.918	68.812	54.006	281	4.498	254	43.224	880.123
Mainpuri	1.075.136	1.134.241	1.22.048	1.65.522	58.015	47.677	91	13.740	237	55.639	671.272
Etah	1.097.792	1.102.096	7.294	35.309	66.744	131.134	661	29.965	2.225	58.467	770.297

Source: India Wasteland Survey and Reclamation Committee (1959). Report on Location and Utilization of Wasteland in India. Part-1. Uttar Pradesh. p.40.

CHAPTER VII

PRICE MOVEMENTS AND AGRICULTURAL FINANCE

1. Price Movements

In an agricultural economy which is largely based on self-subsistence the role of prices is limited. But as exchange and commodity production enter the agricultural sector the role and significance of prices assume a greater importance. Prices become relevant because they directly affect the incomes of cultivators, their capacity to buy inputs and the crop pattern itself.

Secondly, the study of price trends and fluctuations is highly relevant to the analysis of agrarian relationships. Though the basic method of extraction of surplus labour from the lower strata of peasantry and the landless labourers is in the form of product of labour, cash rent and labour, agricultural price movements also play a secondary but positive role in moulding the class structure within the peasant economy.

Upward price movements tend to accentuate class differentiation by fostering commercialisation which brings higher incomes to a comparatively smaller section of cultivators producing a surplus as they possess larger areas of land and the resources. The same process of rising prices

and commercialisation adversely affects those having smaller plots and lesser resources. They are the losers as they have to buy part of their food and other requirements in the market at higher prices.

In the following discussion we shall examine the major trends in the price movements of selected food and commercial crops in the districts of Western U.P. during 1951-81 and an effort will be made to trace the impact of these price changes on the major agrarian classes in the region. The districtwise price data have been issued by the Directorate of Economics and Statistics, Ministry of Food and Agriculture under the title 'Farm (Harvest) Prices of Principal Crops'. These would be our main source of information in measuring price movements.

Farm (Harvest) prices of Principal Crops provides districtwise data on both the prices of foodgrains and commercial crops. The detailed tables compiled from these statistics are set out in appendix 7.1 and 7.2. Crops chosen for this study are wheat, Paddy, Jowar, Bajra, Maize, Barley, Gram, Tur (Arhar), Sugarcane, Potatoes and Tobacco as these constitute the major crops of the districts under study. Among these the most important crops with regard to both total output and acreage are wheat and sugarcane.

There are certain difficulties involved in the use of these statistics. The Farm (Harvest) Prices of Principal Crops does not provide continuous data as there are certain gaps. We have information about 1950-51, 1951-52 and then continuously from 1961-62 to 1981-82, with the exception of 1970-71, 1972-73 and 1973-74 for which there is no information. Yet we have nearly full information on the period 1961-62 to 1981-82 on whose basis firm conclusions can be drawn.

Another difficulty in the use of the price data relates to the fact that while for the period 1964-65 to 1968-69 data are given for prices of raw gur for the remaining period they are for sugarcane. There is a similar problem in the case of paddy and rice. Data for 1950-51 and 1951-52 are for rice while for all the other years from 1961-62 to 1981-82 they are for paddy. This difficulty has been tackled by taking up the prices of paddy and sugarcane alone for our analysis and leaving out those of rice and raw gur. This is justifiable as data are available for a much longer period for paddy and sugarcane in comparison to rice and raw gur.

Table 7.1 shows per cent increase in the prices of individual crops. Wheat which is both a foodgrain and a commercial crop showed moderate increase in its price relative to other crops over the period 1950-82. Taking 1961-

TABLE 7.1

Index of Prices of Major Crops for all the Districts of Agra and Meerut Divisions (1950-51 to 1981-82)

	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 WHEAT	103.61	102.95	100.00	101.07	122.73	175.66	170.95	279.56	195.19	193.73	221.95	180.66	360.15	246.83	267.85	275.34	270.66	290.78	320.22	382.02
2 PADDY	-	-	100.00	98.38	121.99	151.55	187.31	255.97	269.61	228.46	222.56	187.31	343.78	286.23	277.58	287.31	310.58	328.07	349.54	443.99
3 JOWAR	123.87	82.05	100.00	92.09	106.90	179.27	173.20	215.25	246.85	162.16	183.39	159.91	445.45	226.95	238.55	325.05	289.61	331.74	358.93	352.06
4 BAJRA	86.16	80.41	100.00	92.46	119.11	181.34	180.34	227.48	258.49	173.58	191.09	164.39	472.49	235.07	244.58	330.61	291.98	340.61	370.45	379.59
5 MAIZE	174.12	158.24	100.00	147.53	188.58	277.11	287.72	313.93	423.22	277.30	278.15	238.72	793.65	329.86	335.73	496.73	533.36	522.75	551.80	620.23
6 BARLEY	103.01	102.00	100.00	104.90	147.86	183.50	196.62	315.88	189.46	179.65	211.26	246.58	436.34	214.21	289.64	301.09	293.75	422.13	413.63	418.61
7 GRAM	104.70	96.36	100.00	114.44	147.11	176.68	196.71	337.97	243.80	238.65	290.50	276.80	538.41	377.83	388.37	528.76	524.03	658.89	964.24	775.58
8 TUR (ARHAR)	-	-	100.00	108.17	158.59	164.73	166.63	263.31	195.13	183.24	232.89	231.77	414.08	287.76	-	-	-	-	-	719.08
9 SURGARCANE	-	-	100.00	107.98	145.01	-	-	-	-	-	197.15	266.66	368.09	306.84	343.02	324.79	256.70	440.74	615.67	575.50
10 POTATOES	-	-	100.00	76.15	137.19	125.22	101.23	231.29	146.46	83.74	155.00	123.39	150.75	134.99	-	-	-	-	-	189.77
11 TOBACCO	-	-	100.00	350.98	297.77	268.21	387.32	548.20	445.71	460.77	-	-	-	903.79	643.31	634.45	812.39	626.95	1441.66	1108.95

Calculated from Farm (Harvest) Prices of Principal Crops, Directorate of Economics and Statistics, Ministry of Food and Agriculture, Govt. of India, Manager of Publications, Delhi.

62 as the base year the price of this crop showed a moderate increase uptill 1965-66, but during the year 1966-67 the increase in its price was abnormal, being about 63 per cent over the previous year. An abnormal increase took place again during 1974-75. One of the reasons for the abnormal rise in prices might have been a fall in output as a result of failure of monsoon. Price of wheat crop fell during the years 1967-68, 1968-69 and 1975-76. A fall in the price in this period, it is generally pointed out, was due to introduction of high yielding variety seeds (see Chapter 3). This increased the production to a considerable extent augmenting the supply of wheat and pushing down its price in the region.

Paddy which is also cultivated in some districts of this region showed a higher rise in its price compared to the rise in the price of wheat over the period 1950-82. Its price increased by about 344 per cent during this period. Upto 1964-65 price of paddy increased at a lesser rate compared to the increase in the price of wheat but after 1964-65 per cent increase in the price of paddy was higher compared to that of wheat. Since in the case of paddy high yielding seeds were not used there was no depression in its prices at any time.

Jowar which is an inferior crop and is consumed by poorer classes also showed a moderate increase in its price during the period 1961-62--1981-82. Abnormal rise in its

price occurred during 1974-75 but after 1975-76 the increase was moderate; and the percent increase in its price was less compared to that of wheat and paddy.

Bajra, also an inferior crop, showed moderate increase in its price which increased at a faster rate compared to the price of Jowar but at a lesser rate compared to wheat and paddy.

Price of maize increased significantly over the period 1950-51--1981-82. The over all increase in price was 520 per cent during the entire period. After a rise in early 1970s its price fell during 1975-76 and thereafter showed a gradual increase.

Barley, again an inferior crop showed a moderate rise in its price during the entire period, except during early 1970s when an abnormal rise in its price occurred.

Price of gram showed a significant rise throughout our period. It increased by 675 per cent during the period 1961-62--1981-82.

The price of Arhar (tur) also increased significantly showing an increase by 619 per cent during 1961-62--1981-82. As has already been discussed earlier (Chapter 3), the area under pulses had decreased in the region during this period. This must have decreased the output while demand remained

constant or even might have increased. A very sharp increase in the price of Arhar took place due to fall in its production. Since the maturity period for Arhar is longer compared to other crops and its production needs employment of a greater number of labourers which increases its cost of production, farmers probably do not find production of this crop very profitable.

Price of sugarcane showed a significant rise but the increase was less compared to maize, gram and Arhar. Its price increased by 475 per cent during 1961-62 - 1981-82. The increase was highest during 1980-81 which showed an increase of around 40 per cent compared to the price of 1979-80. The cultivation of sugarcane requires a larger size of labour force compared to other crops. It also requires a greater use of irrigation and fertiliser. Due to labour cost and other input costs the cost of cultivation of sugarcane is high, which is reflected in its higher price.

Potato which is a commercial crop, did not show any marked increase in price. The price increased by about 90 per cent during 1961-62 - 1981-82. It also showed marked fluctuations. A fall of about 24 per cent was witnessed during 1962-63 compared to the previous year's price.

Our data show that the greatest increase occurred in the price of Tobacco which was as high as 1009 per cent during 1961-62 - 1981-82.

The above data show that prices of commercial crops increased at a faster rate compared to the prices of foodgrains. Since commercial crops are mainly grown by rich peasants, their relative economic position must have improved further due to the marked and sustained increase in the prices of these crops. Obviously, this must lead to even greater income disparities in the rural areas.

The impact of these price movements on the living conditions of agricultural labourers can be discussed by comparing the wage index of the region with the price index. This has been attempted in Table 7.2.

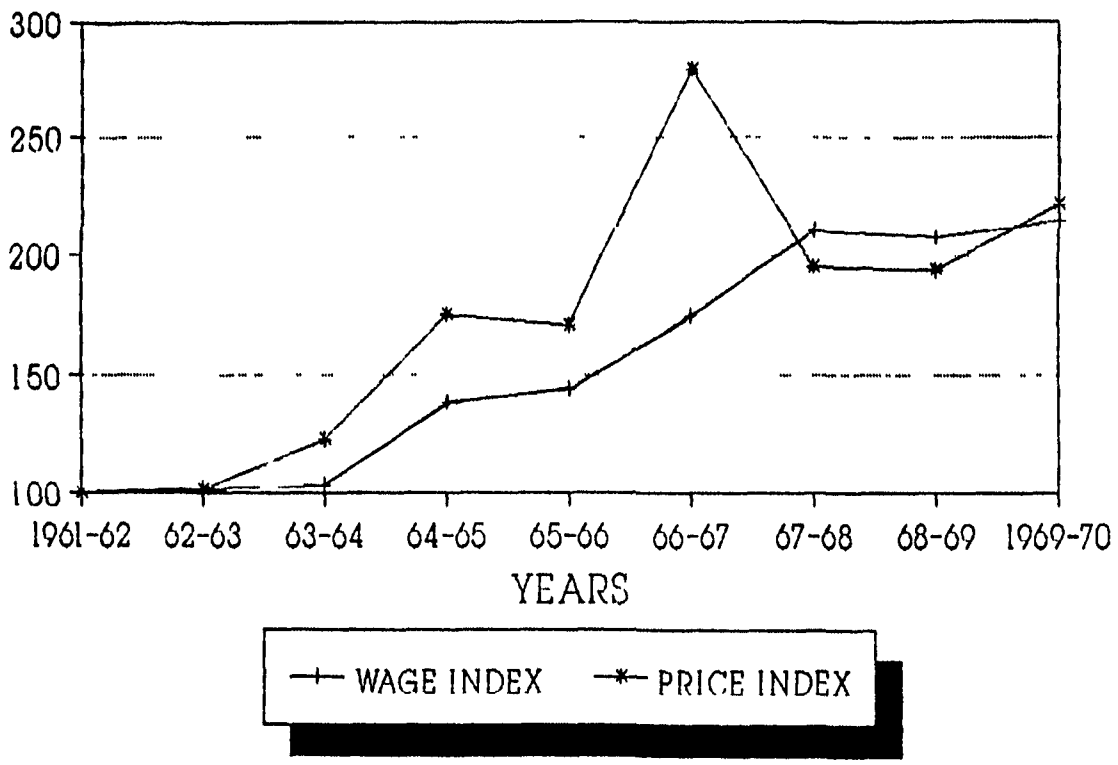
Table 7.2

Movement of Daily Wages and Prices in Western U.P.

Year	Money wage rates (In rupees)	Wage index	Price in index (Wheat)
1961-62	1.57	100.00	100.00
1962-63	1.60	101.91	101.07
1963-64	1.62	103.18	122.73
1964-65	2.17	138.22	175.66
1965-66	2.26	143.95	170.95
1966-67	2.72	175.16	279.56
1967-68	3.31	210.83	195.19
1968-69	3.26	207.64	193.73
1969-70	3.37	214.65	221.95

Source for Wage data: Rohini Nayyar, 'Wages of Agricultural Labourers in Uttar Pradesh', Economic and Political Weekly, Vol. II, 1976, P. 1771, Calculated from Quarterly Bulletin of Statistics. Price Index from Table 7.1.

PRICE AND WAGE INDEX
1961-62--1969-70



Since wheat is the most important crop of our region and is used by all agricultural classes for consumption, this crop is chosen for comparison of price index with wage index. As the increase in the price of wheat has been moderate compared to other crops, its choice as the representative food crop is less likely to show any abnormal depression of real wages.

Taking 1961-62 as the base year table 7.2 and the graph show that the rise in wages was less compared to rise in prices. In 1962-63 per cent rise in wage was greater compared to rise in prices by 0.84 per cent point; but after that increase in price was greater compared to the increase in wages. The wages in 1963-64 increased by about 3 per cent compared to 1961-62 while price increased by 22 per cent during the same period. During 1961-62 - 1966-67 wage increased by only 75 per cent while price increased by 180 per cent. But our data show that during 1967-68 and 1968-69 the wages picked up and increased at a faster rate than price of wheat. This might be due to the introduction of high yielding variety seeds which increased the production of this crop to a considerable extent depressing its price.

In case of a rise in foodgrains prices, the real gainers are the rich farmers: they gain as the monopolisers of the commodity surplus in foodgrains, and they also gain from the fall in the real wage of agricultural labourers,

for they are the major employers of hired labour. The agricultural labourers lose out unambiguously from a rise in price because they are the net buyers of foodgrains.[1]

On the basis of the data given in table 7.2 we can conclude that the share of wages in the total agricultural income has decline. Thus the relative position of wage earning class did not show any improvement; in fact it has worsened. Surplus profit from price rise is appropriated by rich farmers and landlords strengthening the economic position of these classes which is already strong due to unequal distribution of landownership. Rise in the prices of agricultural goods has thus accentuated the income disparity between rich farmers or landlords on the one hand and the class of agricultural labourers on the other.

2. Agricultural Finance

Agricultural finance plays a crucial role in the growth of agricultural production. From 1960 onwards, with the introduction of modern technology in agriculture such as adoption of major and minor irrigation programmes on a large

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1. Utsa Patnaik, 'The Present Agrarian Situation in the Light of the New Economic Policy', Paper written for Seminar on 'The State of the Indian Economy', Deptt. of Economics, A.M.U., 1987, p.14, (Mimeographed).

scale, use of chemical fertilisers, of modern equipments and machinery, plant protection measures, and introduction of high yielding variety of seeds, diversification and intensification of cropping has reached a higher level in Indian agriculture. This is particularly true of regions, like Western U.P., which experienced the Green Revolution during the sixties. As a result of these developments the requirements and timely availability of credit to the cultivators has acquired utmost significance for agricultural development. On the other hand it can be argued, with equal emphasis, that in an economy where majority of the cultivators belong to the category of small and marginal farmers whose savings are small or even non-existent, the need for institutional finance would be even greater if a a breakthrough has to be achieved. Large cultivators have relatively greater financial resources at their command so that they are in a better position to adopt modern technology while small and marginal cultivators have negligible resource base and they have to depend totally on credit supplies from institutional or Non-institutional sources for carrying on even day to day agricultural operations.

After independence a multi-agency approach has been adopted. Financial cooperatives, commercial banks and regional rural banks are the major sources of institutional

credit. The aim has been to provide cheaper and adequate credit to farmers. Moreover, the emphasis has been on an adequate and timely flow of credit to assist weaker sections of the agricultural population and to the less developed regions.

Various researches have suggested that the credit market in rural areas tends to work systematically against the small farmers.[1] In this section an attempt will be made to analyse the impact of agricultural finance on different agricultural classes in our region. But a fuller discussion of this aspect is hindered by the absence of detailed data on the classwise distribution of agricultural credit in the region of West U.P. as such. Still an attempt is being made to analyse the impact of institutional credit on major agricultural classes on the basis of data provided by the Farm Management Studies and a few other village level studies e.g. by K. Subbarao, S.S. Rajput and D.S. Singh.

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1. C.H. Hanumantha Rao, Technological Change and Distribution of Gains in Indian Agriculture, Macmillan, Delhi, 1975, and
Amiya Kumar Bagchi, The Political Economy of Underdevelopment, Cambridge University Press, London, 1982, p.176.

Table 7.3

Amount of Credit Per Borrower Farm by Size Group and Source, Muzaffarnagar District, U.P. 1966-69

(Amount in Rs.)

Size group (Hectares)	Borrowed from Cooperative society	Borrowed from private sources
Below 2.87	115.67 (28.07)	296.43 (71.93)
2.88 - 4.71	188.00 (26.76)	514.28 (73.24)
4.72 - 6.96	333.22 (61.07)	212.38 (38.93)
6.97 - 10.65	153.01 (27.54)	402.55 (71.46)
10.66 & above	1163.41 (61.53)	727.28 (38.47)
All farms	374.90 (44.73)	463.32 (55.29)

Note: Figures in parentheses show percentage of total credit.

Source: Studies in The Economics of Farm Management in Muzaffarnagar District 1966-69.

The above table shows the amount of credit taken per borrower farm by owners of different size class of holdings from co_operative credit societies and from private money-lenders. The amount of credit taken per borrower farm from institutional source (co-operative societies) increases with an increase in the size of holdings. The cooperative societies provided a much smaller proportion of total credit (i.e. provided by cooperative societies + private money lender) to the lowest two size groups as compared to the

higher size groups. The size group of 6.97 - 10.65 hectares is an exception. This shows that in Muzaffarnagar district smaller farmers still depend on money lenders for their credit needs. These farmers are being exploited by money lenders since they charge a high rate of interest. Cooperative societies that were established to fullfil the credit need of smaller cultivators are not helping these cultivators to any significant extent.

Table 7.4

Distribution of Short Term Cooperative Credit by Size Class of Holdings in East and West U.P., 1975-76

Size Class	East U.P.		West U.P.		Credit per hectare	
	Percent of credit	Percent of area	Percent of credit	Percent of area	East U.P. Rs.	West U.P. Rs.
0 - 1.00	13.20	28.35	18.91	17.22	19.48	72.77
1.01-2.00	23.85	22.12	20.02	20.63	45.11	64.32
2.01-4.00	50.85	22.83	32.98	28.29	93.12	77.24
4.01 & above	12.10	26.70	28.09	33.85	18.97	54.98
All sizes	100.00	100.00	100.00	100.00	41.82	66.27

Source: K. Subbarao: 'Institutional Credit, Uncertainty and Adoption of HYV Technology: A Comparison of East U.P. with West U.P.', Indian Journal of Agricultural Economics, Vol.35, No.1, January-March 1980, p.73.

The above table shows that in Western U.P., during 1975-76, the proportion of short term cooperative credit was roughly in correspondence with the proportion of area owned by all the given size classes, except the size class of 2 to 4 hectares, in whose case the proportion of credit was greater than the proportion of area owned by this size class. In eastern U.P. the medium size groups (owning 1-2 and 2-4 hectares) received a large share of total short-term credit as compared to their share in area, but the situation was reverse in case of both the smallest size group (below 1.00 hectare) and the largest size group (above 4.00 hectares). As a result the inter-class differences in credit per hectare are much greater in East U.P. as compared to West U.P. Thus in West U.P. not only the amount of credit per hectare is much larger in case of all size classes, (except class 2.0 - 4.0 hectare), as compared to East U.P., but the medium and small farmers have also been better served by the cooperative institutions.

Another study was undertaken by S.S. Rajput[1] of a village called Sadarban under the community Development Block

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1. S.S. Rajput et al., 'Farm Credit Availability, And Its Utilization - A Case Study', Indian Cooperative Review, Vol.XVII, No.3, April 1980, p.252.

of Bichpuri, Agra District. It covered the year 1975-76. In this village there were 112 cultivating families, out of which 50 were borrowing families and 62 non-borrowing families. The cultivating families were further divided into four categories i.e. marginal farmers (below 2.50 acres) small farmers (2.50 - 5.00 acres), medium farmers (between 5.00 to 10.00 acres) and large farmers (more than 10.00 acres).

Table 7.5

Magnitude of Borrowing per Family From Institutional and Non-institutional Agencies During 1975-76, Village Sadarban

Farm size group	Average borrowing per family from institutional agency in Rs.	Average borrowing from private agency in Rs.	Total borrowing (institutional and private agencies)
Marginal	188.88 (13.00)	1261.12 (87.00)	1450.0 (100)
Small	2445.0 (33.56)	4833.00 (66.44)	7278.0 (100)
Medium	3211.86 (79.90)	858.14 (20.10)	4069.0 (100)
Large	1740.00 (57.61)	1280.00 (42.39)	3020.0 (100)
Overall	1675.75 (51.25)	1593.75 (48.75)	3269.5 (100)

Note: Figures in parenthesis are percentage of total.

Source: S.S. Rajput et al. 'Farm Credit Availability, And Its Utilization - A Case Study', Indian Cooperative Review, Vol.XVII, No.3 (April 1980), p.253.

The above data shows that the average borrowing per family from institutional agencies (Cooperative, Govt.,Banks) increases with increase in the size of holdings. The

majority of the marginal farmers are in the grip of private or non-institutional agencies which provided 87 per cent of their total borrowings. In the case of small farmers 66.44 per cent of the total borrowings came from non-institutional agencies. The proportion of non-institutional borrowing in case of medium and large farm size groups was 20.10 and 42.39 per cent respectively. It may, therefore, be safely concluded that small and marginal farmers were still being served mainly by non-institutional agencies. The bureaucratic procedures involved before a loan is granted and the time gap between the application and the actual grant discouraged marginal peasants. The village money lender was available easily even though his terms were harsher. Under these circumstances rural finance provided by institutional agencies had, generally, been appropriated by middle and affluent farmers, who could not only afford to wait for a longer period but had also a greater access to administrators and the political elite at the village and district levels or even at the higher echelons.

A survey conducted by D.S. Singh[1] in five village in Kalyanpur block of Kanpur district, showed that as the size of

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1. D.S. Singh et al., 'An Estimate of Production Supporting Credit in Relation to Long Term Credit (A Case Study)', Indian Journal of Agricultural Economics, Vol.XXXIII, No.4, Oct-Dec., 1978, p.150.

farm increased the levels of long term credit and short-term credit also increased. The amount of long term credit in the case of small size group (0-3 hectares), medium size group (3-6 hectares) and large size groups (6 hectares and above) was Rs. 2715.70, Rs. 3455.7 and Rs. 4000.92 respectively.

Short term credit for production purposes financed by institutional agencies worked out to be Rs. 107.50, Rs. 236.36 and Rs. 247.22 for the three respective size-groups of farms. The survey of the five villages of Kanpur district is relevant to our study as Kanpur district is adjacent to our region. The findings are similar to that of the survey of village Sadarban of Agra district, earlier discussed.

It would also be interesting to examine, here, the share of institutional finance that has been granted to the different classes of cultivators in the country as a whole. Such an analysis has been attempted by V.A. Avadhani and the following table summarises his findings.

Table 7.6

Share of Institutional Finance For Various Groups of Cultivators - 1961-62 and 1971-72 (All India)

Percentage

Fractile groups	Share of each category in total institutional finance for all categories		Share of institutional finance in total (institutional + non institutional) finance of each category	
	1961-62	1971-72	1961-62	1971-72
Group I 0-22 per cent	0.6	0.3	7.1	5.5
Group II 22-60 per cent	8.3	5.8	10.3	9.8
Group III 60-76 per cent	13.8	8.8	14.7	12.0
Group IV above 76 per cent	77.3	85.1	22.0	27.0
Total	100.0	100.0	18.7	22.0

Source: V.A.Avadhani, 'Rural Retrogression and Institutional Finance', Review of Agriculture, Economic and Political Weekly, June 30, 1979, P.A-83.

In the above table V.A. Avadhani shows the flow of institutional finance to various categories of cultivators during 1961-62 and 1971-72. His table is based on the detailed statistics collected by All India Rural Debt and Investment Survey, conducted by RBI. The above four groups correspond to marginal, small, medium and large cultivators. While the share of large cultivators in the total

institutional finance for all categories of cultivators had increased over the decade from 77 per cent to 85 per cent, it had, generally, declined in the case of marginal, small and medium categories of cultivators. Similarly, the share of institutional finance in the total finance (institutional + non-institutional finance) for each category of cultivators had increased over the decade in the case of large farmers while it had declined in respect of other categories of cultivators. Thus the above table shows that the large cultivators had benefited more by institutional credit than the other categories of cultivators.

According to Avadhani the major weakness of institutional financing is that large and rich cultivators are able to secure a large finance from institutions, some of which might have been diverted for unauthorised purposes or for money lending to small farmers, with a view to acquire economic and social hegemony. The fact that large, cultivators could have diverted a share of the finance given to them by credit institutions cannot be substantiated by data as they would not like to give out such information. However, the data in table no.7.6 show that their share in institutional finance had increased much more than the share of other categories of cultivators over the decade 1961-71.

The available information suggests that the institutional agencies are meeting a lesser proportion of the credit requirement of marginal and small cultivators as compared to medium and large cultivators. The smaller cultivators remain in the clutches of the private money lenders, who charge usurious interest. It is, indeed, a sad commentary on the working of our rural credit institutions.

Cultivators can raise loans from cooperative societies and commercial banks only against proper security. Small farmers find it difficult to raise enough credit for their requirements because they do not have proper securities to pledge against loans. The policy of cooperative societies of issuing loans to member farmers in proportion to their share-money with the society is also pro-rich. The rich peasants deposit large amounts of share - money and hence draw large amounts of credit from cooperative societies. On account of this policy, a large chunk of cooperative funds goes into the pockets of richer cultivators. The cooperative credit sector has, beyond doubt, failed in achieving its major objective which was to strengthen the financial position of the lower strata of Indian peasantry which constitute the great majority of our rural population. On the other hand it has further widened the financial, and therefore the resource gap, between the large and small farmers. Whether we examine

the western parts of Uttar Pradesh, the entire state or the country as a whole, broadly the same picture repeats itself, even though there are variations in details.

APPENDIX 7.1

PRICES OF WHEAT IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	15.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154.97
2 SAHARANPUR	-	16.00	16.12	41.74	35.28	81.52	70.79	122.28	84.15	82.62	91.26	76.89	143.58	105.01	115.91	111.30	-	116.38	130.08	154.88
3 MUZAFFARNAGAR	16.00	16.00	15.67	44.07	-	74.30	71.80	114.81	92.58	80.51	96.74	75.93	143.83	105.13	122.05	122.49	119.13	118.87	131.47	176.14
4 MEERUT	-	16.00	15.63	42.20	-	70.36	69.37	116.49	80.23	82.07	93.77	77.25	144.76	101.81	113.42	113.03	115.29	-	-	-
5 BULANDSHAHR	16.00	14.00	14.67	41.64	55.77	76.25	72.13	117.91	77.60	77.47	90.80	-	-	101.09	110.25	113.11	114.63	117.91	-	-
6 ALIGARH	-	-	14.70	39.95	-	66.72	69.48	109.29	77.16	78.34	84.94	78.55	-	99.73	109.01	109.75	108.04	119.54	128.99	147.28
7 MATHURA	-	16.00	15.82	42.47	56.74	72.99	70.16	116.60	75.34	78.59	87.47	75.21	141.53	102.05	111.42	110.79	112.29	121.57	133.18	154.44
8 AGRA	16.00	16.00	-	-	52.00	-	-	-	-	-	-	60.80	149.75	102.50	-	120.14	-	-	140.71	165.54
9 MAINPURI	16.00	16.00	14.21	39.65	52.00	66.11	70.51	113.60	77.37	79.50	-	73.89	162.50	98.32	93.25	107.63	103.12	123.37	127.09	143.09
10 ETAH	15.25	16.00	15.03	39.84	50.16	67.95	66.51	105.99	75.81	76.35	92.03	-	-	95.18	103.27	107.75	104.33	116.98	127.50	-
(a) Total	79.25	126.00	137.74	331.56	301.95	576.20	560.75	916.97	640.24	635.45	637.01	518.52	885.95	910.82	878.58	1015.99	776.83	834.60	919.02	1098.44
(b) No. of Reporting Districts	5	8	9	8	6	8	8	8	8	8	7	7	6	9	8	9	7	7	7	7
Average (a/b)	15.85	15.75	15.30	41.44	50.32	72.02	70.09	114.62	80.03	79.43	91.00	74.07	147.66	101.20	109.82	112.89	110.97	119.22	131.29	156.63

Source: Farm (Harvest) prices of Principal Crops. Directorate of Economics and Statistics, Ministry of Food and Agriculture, Govt. of India, Manager of Publications. Delhi.

APPENDIX 7.1

PRICES OF RICE/PADDY IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	142.03*
2 SAHARANPUR	22.88	20.00	10.62*	28.00*	34.72*	43.13*	53.31*	72.85*	76.73*	65.02*	63.34*	53.31*	97.84*	81.46*	79.00*	81.77*	88.39*	93.37*	99.48*	-
3 MUZAFFARNAGAR	-	35.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128.52*
4 MEERUT	22.88	24.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 BULANDSHAHR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 ALIGARH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 MATHURA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 AGRA	30.00	30.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 MAINPURI	32.00	29.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	108.53*
10 ETAH	26.69	32.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(a) Total	134.45	171.25	10.62	28.00	34.72	43.13	53.31	72.85	76.73	65.02	63.34	53.31	97.84	81.46	79.00	81.77	88.39	93.37	99.48	379.08
(b) No. of Reporting Districts	5	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Average (a/b)	26.89	28.54	10.62	28.00	34.72	43.13	53.31	72.85	76.73	65.02	63.34	53.31	97.84	81.46	79.00	81.77	88.39	93.37	99.48	126.36

* represents Paddy
Source: op.cit

APPENDIX 7.1

PRICES OF JOWAR IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 SAHARANPUR	20.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 MUZAFFARNAGAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 MEERUT	-	10.69	12.05	33.70	-	63.37	62.66	76.10	76.40	53.61	59.67	51.63	164.33	77.59	76.52	107.28	106.37	108.75	-	-
5 BULANDSHAHR	22.88	-	12.70	31.13	35.21	70.68	60.38	77.89	80.95	49.12	55.74	52.14	130.55	-	-	97.35	110.82	99.74	100.50	107.26
6 ALIGARH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 MATHURA	-	-	12.88	31.96	37.70	64.85	58.40	67.89	89.02	64.93	69.28	54.44	152.83	78.85	81.92	119.45	98.16	117.63	118.06	128.29
8 AGRA	10.69	10.69	12.54	29.28	35.96	57.63	56.81	72.91	84.70	56.34	64.33	56.00	154.00	-	87.62	113.75	80.37	-	125.94	-
9 MAINPURI	8.88	10.00	12.83	29.44	35.55	46.17	54.20	68.67	85.73	49.80	60.62	55.78	-	73.49	76.18	111.00	90.76	122.00	140.34	121.13
10 ETAH	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(a) Total	62.45	41.38	63.00	155.51	144.42	302.70	292.45	363.46	416.80	273.80	309.64	269.99	601.71	229.93	322.24	548.83	486.48	448.12	484.84	356.68
(b) No. of Reporting Districts	4	4	5	5	4	5	5	5	5	5	5	5	4	3	4	5	5	4	4	3
Average (a/b)	15.61	10.34	12.60	31.10	36.10	60.54	58.49	72.69	83.36	54.76	61.93	54.00	150.43	76.64	80.56	109.77	97.30	112.03	121.21	118.89

Source: op.cit.

APPENDIX 7.1

PRICES OF BAJRA IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 SAHARANPUR	14.56	-	13.64	34.11	39.71	65.89	65.37	82.26	86.50	61.95	63.89	55.55	163.67	78.68	78.89	94.17	119.07	-	114.44	-
3 MUZAFFARNAGAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 MEERUT	-	11.44	14.31	37.46	-	67.12	67.84	86.84	85.92	62.18	66.48	55.51	167.64	77.85	77.91	107.69	109.87	109.13	-	-
5 BULANDSHAHR	-	-	14.37	36.06	41.50	75.83	67.11	87.53	85.16	53.33	59.84	55.71	162.34	-	-	109.85	109.73	114.93	132.35	128.74
6 ALIGARH	-	-	14.41	33.57	43.89	69.26	61.13	75.23	92.59	60.83	68.49	58.87	-	84.79	89.44	127.29	96.87	119.14	129.20	132.35
7 MATHURA	-	-	14.05	36.33	44.61	71.34	64.49	75.83	91.98	65.14	71.09	57.68	172.04	83.04	90.87	124.27	90.81	121.47	118.91	134.14
8 AGRA	-	11.44	14.05	33.52	40.59	59.29	63.97	79.89	95.06	62.50	69.42	57.81	162.00	-	89.17	116.43	86.63	-	125.00	135.64
9 MAINPURI	10.00	11.06	13.90	33.84	39.97	48.62	55.10	71.32	90.49	57.57	66.53	59.67	-	77.87	84.27	118.50	94.63	125.13	144.92	128.43
10 ETAH	11.88	11.44	14.05	34.64	39.81	47.38	56.93	74.23	91.77	59.62	66.08	56.69	-	88.44	-	123.39	105.00	121.23	137.47	-
(a) Total	36.44	45.38	112.78	279.53	290.08	504.73	501.94	633.13	719.47	483.12	531.82	457.49	827.69	490.67	510.55	921.59	812.61	711.03	902.29	660.30
(b) No. of Reporting Districts	3	4	8	8	7	8	8	8	8	8	8	8	5	6	6	8	8	6	7	5
Average (a/b)	12.15	11.34	14.10	34.94	41.44	63.09	62.74	79.14	89.93	60.39	66.48	57.19	165.54	81.78	85.09	115.20	101.58	118.50	128.89	132.06

Source: op.cit.

APPENDIX 7.1

PRICES OF MAIZE IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	16.00	16.00	-	-	-	-	-	-	-	-	-	-	163.29	71.02	71.62	115.33	130.00	118.94	128.00	-
2 SAHARANPUR	13.31	11.44	11.71	31.91	32.85	62.68	61.77	70.03	90.20	64.19	57.53	52.51	170.60	70.82	68.26	93.49	119.30	113.19	119.27	129.00
3 MUZAFFARNAGAR	-	-	12.24	34.32	37.38	63.95	63.75	72.52	86.07	64.86	60.05	48.56	170.96	66.66	67.40	104.21	111.48	111.38	113.49	134.21
4 MEERUT	-	10.69	12.41	32.28	36.17	61.67	63.84	69.18	86.65	62.42	60.05	50.47	169.92	70.21	74.85	110.66	115.00	109.50	-	-
5 BULANDSHAHR	16.00	14.56	13.06	36.28	66.37	65 66	65.66	66.95	92.87	56 38	57.47	47.94	159.20	70.90	-	109 12	112.52	105.28	118.17	131.86
6 ALIGARH	-	-	12.14	28.56	35.39	59 65	60.73	63.14	92.77	59.85	59.49	51.64	163.57	67.17	71.37	103.32	103.46	110.87	106.33	128.41
7 MATHURA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133.01
8 AGRA	-	10.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 MAINPURI	12.56	-	11.15	27.11	36.20	44 17	53.51	58.19	89.18	51.65	56.76	50.43	174.64	72.05	74.52	101.25	96.00	102.94	125.77	132.25
10 ETAH	10.69	11.44	11.13	27 46	34.19	51 39	55 74	63.65	87.40	50.22	59.52	51.08	-	68.01	-	101 15	-	-	104.00	127.39
(a) Total	68.56	74.82	83.84	217 92	278 55	409.17	425.00	463.66	625.14	409.57	410.87	352.63	1172.18	556.84	425.02	838.54	787.76	772.10	815.03	916.13
(b) No. of Reporting Districts	5	6	7	7	7	7	7	7	7	7	7	7	7	8	6	8	7	7	7	7
Average (a/b)	13.71	12.47	11.98	31.13	39.79	58 47	60.71	66.24	89.30	58.51	58.69	50.37	167.46	69.60	70.84	104.81	112.54	110.3	116.43	130.87

Source: op.cit.

APPENDIX 7.1

PRICES OF BARLEY IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116.28
2 SAHARANPUR	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 MUZAFFARNAGAR	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 MEERUT	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	138.87	-	-
5 BULANDSHAHR	-	10.69	-	28.37	40.46	53.39	54.76	84.43	54.86	51.42	64.47	-	-	58.40	91.96	88.33	80.97	138.87	-	-
6 ALIGARH	-	-	10.30	26.23	-	49.94	53.63	81.65	52.16	48.34	57.80	56.19	-	56.47	81.34	78.37	76.19	103.91	112.79	105.25
7 MATHURA	-	11.06	10.31	25.57	40.23	48.28	53.62	81.92	53.66	49.67	54.12	55.19	103.71	56.99	78.03	91.57	81.89	108.79	119.19	111.19
8 AGRA	10.00	10.00	10.24	27.76	42.48	50.68	57.34	102.27	51.76	52.18	60.59	92.20	113.98	59.33	-	89.00	-	-	119.37	120.12
9 MAINPURI	11.06	11.44	-	-	-	-	-	-	-	-	-	-	142.56	70.29	72.00	79.50	80.13	104.00	108.05	112.20
10 ETAH	10.69	10.69	10.25	26.42	39.61	50.20	51.19	84.40	48.25	45.59	53.69	-	-	52.24	75.24	70.40	85.00	102.61	109.75	-
(a) Total	31.75	83.88	41.10	134.35	162.78	252.49	270.54	434.67	260.69	247.20	290.67	203.58	360.25	353.72	398.57	497.17	404.18	697.05	569.15	565.04
(b) No. of Reporting Districts	3	8	4	5	4	5	5	5	5	5	5	3	3	6	5	6	5	6	5	5
Average (a/b)	10.58	10.48	10.27	26.87	40.69	50.50	54.11	86.93	52.14	49.44	58.14	67.86	120.08	58.95	79.71	82.86	80.84	116.17	113.83	113.00

Source: op.cit.

APPENDIX 7.1

PRICES OF GRAM IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	14.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 SAHARANPUR	-	11.44	14.03	41.72	-	69.77	66.81	115.66	90.92	83.51	95.29	94.58	-	143.16	139.55	195.04	-	253.06	356.63	309.38
3 MUZAFFARNAGAR	-	11.44	14.01	-	-	65.71	70.60	116.98	93.69	87.73	96.72	92.93	193.33	138.97	136.37	187.14	190.47	229.24	340.24	291.01
4 MEERUT	-	13.31	13.63	41.29	-	63.12	67.41	115.81	84.67	82.84	105.65	99.18	193.95	138.31	128.75	195.76	-	-	-	-
5 BULANDSHAHR	-	-	10.17	-	-	-	-	-	-	-	-	-	-	136.40	137.18	186.20	198.87	200.94	-	-
6 ALIGARH	-	-	10.37	35.74	-	54.46	65.06	109.28	77.84	75.42	105.69	90.42	-	116.17	129.52	149.35	166.37	224.04	312.81	252.31
7 MATHURA	16.00	12.06	12.21	37.91	51.53	54.83	61.85	113.14	78.48	77.41	94.64	90.94	191.88	124.15	131.98	162.15	171.34	220.29	321.26	252.00
8 AGRA	11.44	11.44	12.59	37.91	48.79	55.97	67.60	120.14	71.04	79.82	91.16	96.05	180.50	110.87	-	193.50	-	-	325.63	239.59
9 MAINPURI	12.06	13.94	12.43	37.48	48.80	54.02	65.99	108.37	80.05	77.73	-	90.62	150.00	113.34	115.25	160.25	158.29	208.25	298.33	228.15
10 ETAH	13.31	11.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(a) Total	52.81	85.07	113.47	232.05	149.12	417.85	465.32	799.38	576.69	564.46	589.15	654.72	909.66	1021.37	918.60	1429.39	885.34	1335.82	1954.90	1572.44
(b) No. of Reporting Districts	4	7	9	6	3	7	7	7	7	7	6	7	5	8	7	8	5	6	6	6
Average (a/b)	13.20	12.15	12.61	38.67	49.71	59.73	66.47	114.20	82.38	80.64	98.19	93.53	181.93	127.67	131.23	178.67	177.07	222.64	325.82	262.07

Source: op.cit.

APPENDIX 7.1

PRICES OF TUR (ARHAR) IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 SAHARANPUR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 MUZAFFARNAGAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 MEERUT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 BULANDSHAHR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 ALIGARH	-	-	14.30	46.81	-	66.21	66.41	110.10	76.16	74.55	93.25	92.89	-	112.85	-	-	-	-	-	292.75
7 MATHURA	-	-	-	-	-	-	-	-	-	-	-	-	170.08	117.59	-	-	-	-	-	308.49
8 AGRA	-	-	16.21	38.47	-	67.00	-	-	-	-	-	-	161.53	-	-	-	-	-	-	282.32
9 MAINPURI	-	-	14.31	44.64	63.50	65.44	67.05	100.77	78.83	73.57	-	92.71	-	-	-	-	-	-	-	268.13
10 ETAH	-	-	-	-	-	65.18	66.59	-	79.41	71.99	93.25	-	-	-	-	-	-	-	-	-
(a) Total	-	-	44.82	129.92	63.50	263.83	200.15	210.87	234.40	220.11	186.50	185.60	331.61	230.44	-	-	-	-	-	1151.69
(b) No. of Reporting Districts	-	-	3	3	1	4	3	2	3	3	2	2	2	2	-	-	-	-	-	4
Average (a/b)		-	-	14.94	43.31	63.50	65.96	66.72	105.43	76.13	73.37	93.25	92.8	165.80	115.22	-	-	-	-	- 287.92

Source: op.cit.

APPENDIX 7.1

PRICES OF SUGARCANE/RAW GUR IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund		Rs. per quintal																	
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	1.55	-	-	-	-	-	198.43	-	-	-	-	-	-	-	-	-	-	-
2 SAHARANPUR	-	-	1.04	3.78*	5.22*	73.75	52.53	78.59	167.61	116.71	6.49*	9.41*	12.97*	9.38*	10.61*	8.50*	5.57*	12.47*	-	19.65*
3 MUZAFFARNAGAR	-	-	1.04	3.75*	5.17*	78.45	58.39	86.54	165.19	119.57	-	7.38*	13.42*	9.73*	11.29*	9.36*	8.47*	17.70*	22.72*	19.72*
4 MEERUT	-	-	1.48	3.93*	5.14*	78.41	55.97	81.89	166.20	106.98	7.20*	9.60*	13.94*	11.15*	12.33*	11.92*	9.56*	17.33*	-	-
5 BULANDSHAHR	-	-	1.44	3.72*	5.14*	81.09	56.97	86.30	174.18	108.36	7.06*	9.88*	11.82*	-	-	-	9.90*	15.53*	22.47*	19.97*
6 ALIGARH	-	-	-	-	4.77*	69.39	52.10	84.97	166.13	103.85	-	10.52*	-	11.58*	15.13*	13.09*	10.79*	14.37*	22.31*	20.77*
7 MATHURA	-	-	-	-	-	72.68	50.70	80.12	161.92	98.82	-	-	12.47*	9.97*	10.84*	11.43*	8.27*	15.87*	21.83*	21.14*
8 AGRA	-	-	-	-	-	69.36	-	99.03	171.32	111.88	-	-	-	-	-	-	-	-	-	-
9 MAINPURI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.94*
10 ETAH	-	-	-	-	-	69.10	63.17	84.50	176.28	105.80	-	-	-	12.84*	-	14.13*	12.54*	15.00*	19.30*	-
(a) Total	-	-	6.55	15.18	25.44	592.23	389.83	682.04	1545.25	871.97	20.75	46.79	64.62*	64.65*	60.20*	68.43*	63.10*	108.27*	108.93*	121.19*
(b) No. of Reporting Districts	-	-	5	4	5	8	7	8	9	8	3	5	5	6	5	6	7	7	5	6
Average (a/b)	-	-	1.31	3.79	5.09	74.03	55.69	85.25	171.69	109.00	6.92	9.36	12.92	10.77	12.04	11.40	9.01	15.47	21.51	20.20

* represents sugarcane
Source: op.cit.

APPENDIX 7.1

PRICES OF POTATOES IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 SAHARANPUR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 MUZAFFARNAGAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 MEERUT	-	-	9.60	18.67	34.16	29.41	21.69	51.85	34.45	21.89	-	31.79	36.83	37.64	-	-	-	-	-	-
5 BULANDSHAHR	-	-	8.91	20.74	33.01	27.34	21.01	52.81	33.22	16.79	31.19	29.75	32.87	31.62	-	-	-	-	-	-
6 ALIGARH	-	-	7.67	15.08	28.96	26.59	21.09	51.41	32.37	17.73	35.22	23.82	31.30	28.51	-	-	-	-	-	37.49
7 MATHURA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 AGRA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43.27
9 MAINPURI	-	-	7.67	14.95	31.11	25.37	21.00	48.33	31.97	16.03	32.55	24.68	31.00	26.71	-	-	-	-	-	43.85
10 ETAH	-	-	7.01	13.91	22.91	28.34	21.00	48.74	28.27	19.22	36.76	25.00	-	23.25	-	-	-	-	-	-
(a) Total	-	-	40.86	83.35	150.15	137.05	105.79	253.14	160.28	91.66	135.72	135.04	132.00	147.73	-	-	-	-	-	124.61
(b) No. of Reporting Districts			5	5	5	5	5	5	5	5	4	5	4	5						3
Average (a/b)			8.17	16.67	30.03	27.41	21.16	50.63	32.06	18.33	33.93	27.01	33.00	29.55						41.54

Source: op.cit.

APPENDIX 7.1

PRICES OF TOBBACO IN THE DISTRICTS OF WESTERN U.P.

	Rs. per maund			Rs. per quintal																
	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1 DEHRADUN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 SAHARANPUR	-	-	-	-	-	-	-	-	-	-	-	-	-	404.26	251.04	245.75	261.43	222.59	-	407.65
3 MUZAFFARNAGAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 MEERUT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 BULANDSHAHR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 ALIGARH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 MATHURA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 AGRA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 MAINPURI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 ETAH	-	-	34.54	121.23	102.85	92.64	133.78	189.35	153.95	159.15	-	-	-	221.17	193.37	192.54	299.78	210.51	497.55	358.42
(a) Total	-	-	34.54	121.23	102.85	92.64	133.78	189.35	153.95	159.15	-	-	-	625.43	444.41	438.29	561.21	433.10	497.55	766.07
(b) No. of Reporting Districts	-	-	1	1	1	1	1	1	1	1	-	-	-	2	2	2	2	2	1	2
Average (a/b)	-	-	34.54	121.23	102.85	92.64	133.78	189.35	153.95	159.15	-	-	-	312.71	222.20	219.14	280.60	216.55	497.55	383.03

Source: op.cit.

APPENDIX 7.2

WEST U.P. AVERAGE PRICES (Rs per quintal)

	CROPS	1950-51	51-52	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70	71-72	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
1	WHEAT	42.48	42.21	41.00	41.44	50.32	72.02	70.09	114.62	80.03	79.43	91.00	74.07	147.66	101.20	109.82	112.89	110.97	119.22	131.29	156.63
2	RICE/PADDY	72.06	76.49	28.46	28.00	34.72	43.13	53.31	72.85	76.73	65.02	63.34	53.31	97.84	81.46	79.00	81.77	88.39	93.37	99.48	126.36
3	JOWAR	41.83	27.71	33.77	31.10	36.10	60.54	58.49	72.69	83.36	54.76	61.93	54.00	150.43	76.64	80.56	109.77	97.80	112.03	121.21	118.89
4	BAJRA	32.56	30.39	37.79	34.94	41.44	63.09	62.74	79.14	89.93	60.39	66.48	57.19	165.54	81.78	85.09	115.02	101.58	118.50	128.88	132.06
5	MAIZE	36.74	33.39	21.10	31.13	39.79	58.47	60.71	66.24	89.30	58.51	58.69	50.37	167.46	69.60	70.84	104.81	112.54	110.30	116.43	130.87
6	BARLEY	28.35	28.07	27.52	28.87	40.69	50.50	54.11	86.93	52.14	49.44	58.14	67.86	120.08	58.95	79.71	82.86	80.84	116.17	113.83	113.00
7	GRAM	35.38	32.56	33.79	38.67	49.71	59.70	66.47	114.20	82.38	80.64	98.19	93.53	181.93	127.67	131.23	178.67	177.07	222.64	325.82	262.07
8	TUR (ARHAR)	-	0.00	40.04	43.31	63.50	65.96	66.72	105.43	78.13	73.37	93.25	92.80	165.80	115.22	0.00	0.00	0.00	0.00	0.00	287.92
9	SUGARCANE	-	0.00	3.51	3.79	5.09	0.00	0.00	0.00	0.00	0.00	6.92	9.36	12.92	10.77	12.04	11.40	9.01	15.47	21.61	20.20
10	GUR	-	0.00	0.00	0.00	0.00	74.03	55.69	85.25	171.69	109.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	POTATOES	-	0.00	21.89	16.67	30.03	27.41	21.16	50.63	32.06	18.33	33.93	27.01	33.00	29.55	0.00	0.00	0.00	0.00	0.00	41.54
12	TOBACCO	-	0.00	34.54	121.23	102.85	92.64	133.78	189.35	153.95	159.15	0.00	0.00	0.00	312.71	222.20	219.14	280.60	216.55	497.95	383.03

Source: Calculated from Farm (Harvest) Prices of Principal Crops. Directorate of Economics and Statistics, Govt. of India, Manager of Publications, Delhi.

CONCLUSION

The emerging land relations in Western U.P. after the abolition of zamindari system can be examined in the light of an understanding of the land system on the eve of zamindari abolition. In the North-Western Provinces (U.P.), during the British period, land settlements were made with the persons having superior rights in land and the persons with lesser rights were ignored. Only later on were inferior rights recognized and the distribution of ownership rights took place resulting in a long chain of sub-infeudation. But still the dominant form of land tenure was rent receiving individual ownership or land-lordism.

On the eve of zamindari abolition in U.P. although all land was owned or held by zamindars the total area under their direct cultivation was small. This meant that most of the land was tenant-operated, largest occupation was that by hereditary tenants.

The land was unequally distributed even among the zamindars. In the eastern districts a little more than one percent (1.20%) of the zamindars owned nearly half of the village area but in the Western districts this inequality was relatively less because here land settlements were mostly made with small and medium sized zamindars under Bhaiachara

land tenures. Inequality was found even in the distribution of Sir and Khudkasht land among the zamindars. Only 3 per cent of the total zamindars had Sir and Khudkasht land of 25 acres or more. The area under Sir and Khudkasht increased even faster in the years immediately preceding the zamindari abolition, as the zamindars tried to retain as much land as possible when reforms were actually enacted.

Changes in the economic position of agricultural labour households constitute one of the most important aspects of land relations. There was a marked increase in the number of agricultural labourers during the British period and the U.P. Zamindari Abolition and Land Reforms Act failed to check this process. Data on Western U.P. support the contention that there is a direct correlation between the ownership of land and the caste system. Generally upper castes are the main landholding castes and the lowest castes provide agricultural labour, this is shown in tables 5.12 and 5.14.

The Uttar Pradesh Zamindari Abolition and Land Reforms Act (1951) replaced the multiplicity of tenures by three types, the bhumidhar, the sirdar and the asami. The Act abolished the institution of absentee landlordism but a new class of landowners - the bhumidhars - emerged in U.P. The former zamindars retained a large part of the land they earlier owned for the purpose of self-cultivation. The occupancy tenants in some cases benefited as the lands they

had cultivated earlier became theirs by law. The landless workers did not benefit by zamindari abolition as they were outside its ambit, being neither owners of land nor taking it on rent. The essential weakness of the scheme of land reforms was that it did not envisage a programme which involved any redistribution of land amongst the poorest and the weakest sections in the agrarian sector. After the abolition of zamindari in U.P. the distribution of ownership holdings became less inequitable than it was earlier. But still marked inequalities in the distribution of land holdings persisted. One of the weaknesses of the Land Reforms Act was that it failed to check the practice of sub-tenancy cultivation through the practice of share-cropping. This resulted in the continued exploitation of small and marginal peasants and landless labourers. In West U.P. there was a decline in the proportion of land under share-cropping between 1953-54 and 1961-62 but this decline occurred much more as a result of resumption of land by landlords for the purpose of self-cultivation, than the acquisition of ownership rights by the former tenants. Due to the Green Revolution there has been a shift in the pattern of share-cropping in Western U.P. The rich peasants often lease-in land from the marginal and small peasants. But since the marginal and small peasants have a low bargaining capacity

due to their weak economic position they are being exploited through these arrangements.

The process of consolidation of holdings began in late 1950s and was completed by 1985 in Western Uttar Pradesh. During the Fifth Five Year Plan (1974-79) alone 2.7 lakh hectares of land were brought under consolidation in the region. The consolidation proceeding by its very nature helped those owning larger areas in scattered fields and so improved the position of the richer farmers. But marginal and small farmers with single small plots obtained no benefits. In practice they often received, in exchange for their holdings,plots with inferior soil. Since consolidation did not otherwise basically affect the pattern of land relationship, it has not been discussed, at length, in this thesis.

Differences in the degree of prosperity of different agrarian classes are no longer related to the size of landholding alone, but also to the type of crop a farmer is able to grow on his land. Hence the study of the cropping pattern of different agricultural classes is of great significance. A detailed study of the changes in the cropping pattern in the region shows a marked increase in the extent of commercialisation as such as well as a shift in favour of commercial crops. Between 1950-53 to 1976-79

area under wheat (the major crop of west U.P.) as percent of the total cropped area increased by 11.3% while the increase was of the order of 2.6% and 2.3% in the case of sugarcane and oilseeds. The percentage of area under foodgrains declined by 6.5% while the area under other crops increased by the same percentage (Table 3.3).

It seems that generally poorer cultivators and share-croppers can not afford to grow commercial crops and have to be content with inferior grains such as maize and jowar, since commercial crops require more water and fertilisers which they cannot afford. Therefore the shift in the cropping pattern has generally taken place in the case of farmers having larger landholdings; small and marginal farmers have not benefited from this shift.

The extent of shift in the cropping pattern from foodgrains to commercial crops was moderate till 1965-66 and the cropping pattern remained more or less stable. The introduction of high yielding variety seeds disrupted this stability. Sharp shifts have taken place in favour of wheat.

In the absence of detailed data on the cropping pattern of different agricultural classes in our region we are not able to point out the impact of shifts in cropping pattern on different agrarian classes, though this aspect is of great significance. Most studies have pointed out that the shift

from food crops to commercial crops is more marked in the case of lands owned by richer peasants (chapter 3).

Irrigation obviously plays an important role in the agricultural development through its effects on the pattern and efficiency of land use. The adoption of modern inputs like HYV seeds and chemical fertilisers too is intimately related to the availability of assured and timely water supply.

In Western U.P. canals were the major source of irrigation in pre-Independence period. But canal irrigation has been relegated to a secondary position in our period due to rapid expansion of tubewell irrigation. It was the non-availability of canal water at critical times and its inadequate quantity that seriously affected cultivation of HYV crops, this resulted in greater use of tubewell irrigation. In 1976-77 about 63.7% of total number of tubewells in U.P. were located in Western U.P. which shows a high degree of concentration. Tubewells provide controllable and dependable supply of water round the year, therefore, tubewell irrigation has become not only the principal mode of groundwater irrigation but also the single most important source of irrigation in Western U.P. Per cent of net irrigated area under tubewells in the region increased from 45.6% to 52.3% during 1953-56 - 1975-78. Our study shows that larger farmers have been reaping a greater advantage

from modern irrigation technology compared to small and marginal farmers due to its higher cost. On account of a relatively larger investment required for it irrigation by tubewells has brought into play the role of capital and finance in a big way, and it has become a major factor in increasing the income disparity between different classes of agriculturists through its multiplier effect on the economy of a farming unit.

The scope for any further expansion of cultivated land had reached saturation point in Uttar Pradesh by 1971. Therefore, to feed the growing population, intensification has become one of the most important policy tenets of the Govt. The use of chemical fertilisers, of high yielding variety seeds and mechanisation are the major aspects we have examined.

There has been a significant increase in the use of chemical fertilisers in the post-Green Revolution period, in Western U.P. Uttar Pradesh ranks third among Indian states in per hectare consumption of chemical fertilisers. Fertiliser consumption per hectare of cropped area in Western U.P. is above the state's overall average. Since both fertiliser and irrigation involve significant costs and hence financial resources, small farmers were found to be unable to take advantage of these inputs to the extent big

farmers did. This has increased the disparity between the rich and the small farmer even further.

Since socio-political power structure in rural India is biased in favour of the big farmers, they have a greater access to government bodies and other institutions. The large cash requirements for purchase of modern inputs, and the risk implicit in the adoption of new technology place the larger farmers at an advantage over smaller holders, and thus further accentuates the degree of disparity between different classes within a region.

Our study shows that the high yielding variety technology had a positive impact on the demand for labour in our region. Irrigation facilities led to a shift in the cropping pattern towards more labour intensive crops and to fertiliser responsive new varieties, which also required more water. This, in turn, increased the work associated with improved agricultural practices like transplanting and application of inputs (water, fertilisers and pesticides). All these, as well as weeding, necessitated by the increased use of fertiliser required more labour. Moreover, since the use of new seeds resulted in higher yields, more labour was required for harvesting and processing the crop. A shorter maturity period for crops grown with HYV seeds permitted the planting of two or even three crops a year, which increased the over all use of labour per unit of cultivated area.

But on the other hand a high degree of mechanisation resulted in displacement of labour. We find that mechanisation of agriculture has occurred on a larger scale in the districts of Western U.P. compared to other regions of the state. Consequently the tendency of displacement of human labour engaged in agricultural operations (such as ploughing, threshing and irrigation) is greater in Western U.P.

Study of the economic condition of agricultural labourers constitutes one of the most important aspects of land relations. Agricultural labourers are economically worst exploited and socially most oppressed section of the agrarian population. In addition to economic exploitation, they are socially discriminated against because a big section of agricultural workers belong to scheduled castes and scheduled tribes.

It was observed from the data available for wages for agricultural labourers (Table 5.4) that wage rates in Western U.P. were not lower than the minimum wage rates fixed by the state government. But the wage rates failed to move with the cost of living index. The increase in the wage rates was far below the rate of increase of working class consumer index. The fast rising consumer price index for agricultural labourers made minimum wage fixation less meaningful. But the

condition of the agricultural labourers of Western U.P. was found to be somewhat better than that of Eastern U.P. This was reflected in the higher wage rates in Western U.P. compared to Eastern U.P. one of the reasons for lack of increase of real wages of agricultural labourers was the absence of any trade union organisation of agricultural labourers in our area. Also, while the economic and social position of agricultural labour, in general, was found to be miserable, that of women agricultural workers was even more so. Employers seemed to have a bias in favour of employing men as against employing women in operations like ploughing and watering. This has resulted in fewer days of employment in a year for women labourers compared to men (Table 5.9).

When a large part of debt is incurred for household consumption, it is an indication of acute poverty. In U.P. 87.5 per cent of the total debt was incurred for consumption purposes by the agricultural labour households during 1950-51; the corresponding figure went down to 45 per cent in 1974-75. The percentage of indebted agricultural households to total agricultural households increased from 22 per cent in 1950-51 to 69 per cent in 1974-75.

During the 1950s the landless labourers were faced with the problem of unemployment but during the 1960s the introduction of the new technology created additional

employment opportunities though not at an adequate pace. The increase in irrigated area and the consequent changes in cropping intensity and cropping pattern have been among the most important forces working on the side of demand for labour. The introduction of HYV seeds has also exerted a positive effect on labour demand in agriculture in the region.

The ceiling legislation which began to be put on the statute book beginning with the Act of 1960, was designed to relieve the pressure on agricultural labourers by providing them with land to till on their own (the preceding Bhoodan Movement had made almost no impact on land re-distribution in our region). Stricter legislation on agricultural ceiling was passed in 1975. The area actually taken over by Govt. by 1980 in Western districts of U.P. was rather modest in size, ranging from 1161 acres in Dehra Dun to 6590 acres in Muzaffarnagar district. The land actually distributed among agricultural labourers and small farmers was still smaller, ranging from 103 acres in Dehra Dun to 4322 acres in Saharanpur. Apparently, resistance by land owners in west U.P. was much greater than by their peers in Central and Southern U.P. where both the acquisition and distribution of land were on a larger scale. The area under wastelands available for reclamation by agricultural labourers in Western U.P. was also by no means large (Table 6.3).

Our study shows that the distribution of land ownership has become slightly less inequitable, atleast on surface, between the period 1953-54 - 1971-72, as a result of the process of splitting up of holdings due to rising demographic pressure as well as the efforts of bigger land owners to divide their holdings among family members to by-pass the land ceiling legislation. The ceiling legislation was not implemented very effectively and hence land holdings of rich peasants (bhumidhars) were not reduced to any significant degree in U.P. This would, probably, be more true in case of Western U.P. where the hold of rich peasants has been much greater. The implementation of the Zamindari Abolition and Land Reforms Act, 1951, and the Land Ceiling Act, 1960, have not been sufficiently effective so as to improve the economic position of scheduled castes in our region to any marked extent.

Prices have an important bearing on agrarian structure. Our study reveals that prices of major commercial crops in the districts of Western U.P. increased at a faster rate compared to the prices of foodgrains with the exception of wheat. This has important implications as far as the economic conditions of different agrarian classes are concerned. Rich farmers are the main producers of commercial crops. Therefore this class gains from price rise in two ways: as a monopolisers of commodity surplus and from the fall in the

real wages of hired labour. The relative position of agricultural labourers deteriorates because they are the net buyers of agricultural produce. Thus price rise further accentuates the income disparity between rich farmers on the one hand and small farmers and agricultural labourers on the other.

In the realm of agricultural credit governmental agencies have acquired a greater importance. Co-operative Societies and Commercial banks have been established with a view to strengthen the economic position of the lower strata of peasantry; but they have been largely unsuccessful in fulfilling their objective. The policy to grant loans against security in the shape of fixed assets is pro-rich. This has further widened the resource gap between the large and the small farmers in Western U.P. As a result the majority of the small farmers still depend on non-institutional sources of finance for their investment need and are still forced to pay exorbitant rates of interest.

These detailed findings lead us to some broad conclusions. The agrarian relations in 1981 are vastly different from those in 1951. Self-cultivated ownership holdings are today the dominant form instead of rent receiving land-lord holdings. But there has been no egalitarian redistribution of land, rather, the original

unevenness of 'operational units' was reproduced and solidified under the Consolidation of Holdings programme. This not only preserved rich peasant farming, but helped to enlarge it. Former landlords operating Sir and Khudkasht and prosperous rich peasants have tended to grow into capitalist farmers, with HYV seeds, private tube-well irrigation, mechanisation and growing markets for agricultural produce. Owing to cheapness of labour, and the heavier labour input in small farms, this process is still not very advanced, but is certainly identifiable. Under these transformed relationships agricultural production has certainly increased and Western U.P. has made its contribution to the country's self-sufficiency in food. Production of commercial crops has increased even more. But the benefits of these changes have not proportionately reached the lower strata of the rural population, the landless labourers and poorer peasants. The land-ceiling legislation of 1961 and later years has not given them noticeable relief since the area of land acquired and redistributed under it in Western U.P. has not been very large: it has not affected the basic uneven, and therefore, inequitous pattern of land-ownership.

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